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PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*Observations on the Formation of organic Strictures in the Male Urethra, with some Remarks on their Consequences and Treatment. With Plates and Illustrations.* By SAMUEL WILMOT, M. D., Ex-Professor of Surgery to the Royal College of Surgeons in Ireland, and Surgeon to Dr. Steevens' Hospital.

STRICTURES of the urethra must be looked upon as forming a most important class of surgical diseases. Their frequency, the many great and formidable maladies they give birth to, the mental distress and bodily suffering which strictured patients constantly endure, stamp their character, and call upon every practical surgeon to use his best and most energetic exertions to enable him to afford relief. The frequency of stricture is well known, and a variety of causes has been advanced to account for it. John Hunter attributed the frequency of stricture to the double office the urethra has to perform, and to its complicated

structure. I will not make any remarks on this strange doctrine; let any one who may wish to become acquainted with it read the quarto edition of Mr. Hunter's work on the Venereal Disease, page 110. The urethra is highly organized, and is exposed to a variety of causes well calculated to excite in it morbid action, and to disturb it in the discharge of its natural functions. Gonorrhœa stands, I believe, foremost in the list; but we can trace the formation of strictures to gout, morbid urine, and to other causes, each of which is attended with inflammation, which, if not subdued in the early stage, is apt to degenerate into chronic inflammation of an insidious, obscure character: unless this be removed, the foundation of stricture, and of other diseases of the urethra, will, in the great majority of cases, be laid. What is the condition of the affected part of the urethra when such morbid actions take up their abode there? I answer, increased vascularity, some thickening, and loss of the elasticity of the lining membrane. This I consider to be the earliest stage of organic stricture, and if it remains unnoticed for any length of time, lymph will be deposited, which lymph becomes organized, and thus an additional thickening of the walls of the diseased portion of the urethra will occur, followed by a further diminution of its caliber at this point. We have sometimes an opportunity of treating strictures in this early stage, and of thus becoming acquainted with their condition. Patients frequently apply for advice for a gleety discharge, perhaps the result of an old gonorrhœa. They will tell us that they have taken every kind of tonic medicine, used a number of powerful injections, and employed sea-bathing, and that still the discharge continues. For such cases I never think of prescribing medicine with the expectation of curing the discharge. I tell such patients that a stricture has formed, or is forming, and that the introduction of a bougie will, most probably, effect a cure. When I gain permission, I pass a plaster bougie, and in general I find a sensitive part, at or near which spot a soft obstruction can be frequently felt, which offers little, if any,

impediment to the passage of the instrument. By continuing the use of the bougie every second or third day for some time, the morbid sensibility of the part will be removed, the gleety discharge will cease, and the pulpy obstruction, and all the other thickening, will disappear, leaving the urethra free. In such cases it is necessary to pass a bougie for some time after all the symptoms have declined. In so early a stage as this we have not as many opportunities of becoming acquainted with strictures as when they are of longer standing, and are more developed, for if no discharge has preceded or accompanied the formation of a stricture, there is usually nothing to excite the attention of the generality of patients; and though there must be some diminution in the stream of urine, yet this change goes on unnoticed by a great number of men, particularly those in the working classes, who frequently become conscious of the existence of a stricture only when a decided difficulty in passing water comes on, or retention takes place. By this time the stricture has undergone remarkable changes; it is now of a resisting and firm consistence, and its aperture is smaller.

I am sorry to say that the pathology of strictures is more limited than we could wish, owing in a great measure to the scarcity of *post mortem* examinations, and to the circumstance that authors who write on the subject appear to withhold what they have learned respecting it. Some very valuable books have lately appeared on urinary diseases, but very little attention has been paid by their authors to the pathology of stricture.

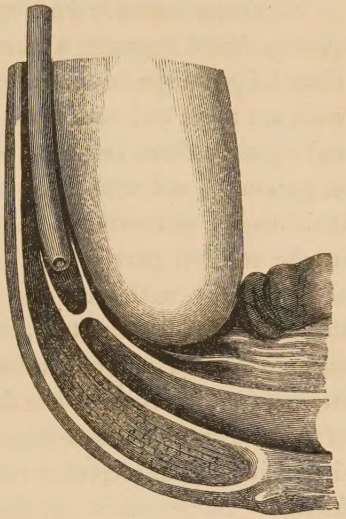
A good deal of the knowledge of the pathology of stricture we possess is acquired by the touch, and by inquiring into the history of the cases as they occur. We know by the instruments we use to cure strictures, that some are irritable, others not so; some soft and yielding, others hard and unyielding; and by an external examination we can in many instances ascertain their extent, and also their consistence. Such information can only

be acquired by the practitioner who has educated his touch, and who has registered in his mind the different sensations communicated to him through instruments while treating strictures. By this we may learn the progress, changes, and extent of strictures. At first, like all newly-formed parts, they are soft and vascular; after some time they become firmer, and yield more slowly to an instrument, while those of long standing are often found as hard as cartilage. The changes I have mentioned take place sooner in some cases than in others, and from these alterations we can account for the changes which occur in the symptoms of stricture. The stream of urine, which at first is not much altered either in size or shape, in time assumes a great variety of appearances, becoming very small, round, or twisted; in some cases forked or scattered; while in very bad cases there is no stream whatever, but the urine escapes in drops: this latter almost always indicates a distended bladder. The effort which the bladder has to exercise to empty itself, varies also greatly during the progress of strictures. As long as the stricture is soft, very little exertion, additional to what is natural, is required; but when the stricture becomes hard and unyielding, with a small opening in it, then the force must be great; it is very distressing to the patient, and, when of long standing, hernia, prolapsus ani, and hæmorrhoids are apt to follow.

Strictures are not limited to any particular extent, nor to any particular tissue of the urethra; we meet with some not more than a line in breadth, while we find others extending from the external orifice to the prostatic portion of the canal. The reader will find these remarks verified by consulting the drawings in the accompanying plates, all of which have been the results of *post mortem* examinations.

The simplest form of stricture is that described by John Hunter: he resembles it to a piece of pack-thread tied around the urethra. This stricture does not, in general, encircle the canal; it occupies only the sides and inferior portion, assuming

a crescentic shape. We recognise such stricture in practice by the circumstance, that as the instrument passes over the obstruction, the sensation of a jerk is communicated to the operator, and the same is felt by the patient. The acccompanying diagram shows a stricture of this kind. Sometimes, owing to inequality in the thickness of this description of stricture, a difficulty is experienced in passing an instrument through it. Plate II. fig. 1, represents another stricture, limited in extent, but much broader than the lineal one; we meet with this kind, I think, more frequently in our practice than we do the former; and, when not of very long standing, it can be removed in a moderate space of time.



These two descriptions of stricture may be said to be superficial, compared with others; the mucous membrane and submucous tissue are the textures engaged, beyond which the disease does not extend. Indeed the lineal stricture appears sometimes as if it were produced by a plait or fold of the mucous membrane, which becomes firm; and the best marked specimens of this kind of stricture are to be found in the membranous portion of the urethra. I have under my care at present a gentleman with a stricture seated in this portion of the urethra; it is, however, rather complicated, and, what is not usual, it extends into the bulb. The case is a bad one, and has been much neglected; there exists a good deal of thickening and hardening about it; the aperture is very small, and when I get an instrument into it, I feel a small eminence, not

much larger than a millet-seed; against this the point of the bougie hitches, and on withdrawing it I find the plaster at the extremity of it turned up, forming a little prominence, about the size of a pin's head.

Strictures seated in the corpus spongiosum urethræ, are frequently found engaging a considerable extent of the canal. In Plate I. fig 1, a specimen of a stricture in this part is shown; its walls are thick and hard; the passage through it is very small and equal. There being no projections, a curved instrument is, generally, not applicable to these cases, in consequence of their length, and owing to the fact that they usually are found in the straight part of the urethra. A well polished gum-elastic bougie, well oiled, and properly adapted to the size of the aperture in the stricture, will pass freely, but with the sensation of a good deal of friction. When we withdraw the instrument, we are surprised to find it quite dry. The thickening of the mucous membrane lining the stricture, and the suspension of its natural secretion, cause, I imagine, this sensation of friction. Some authors say that the mucous membrane has no share in the formation of stricture, and will be found in its normal condition; with this statement few, I think, will agree.

To cure the kind of stricture I have last mentioned, or even to afford relief, must be the work of considerable time. The deposit in the cells of the corpus spongiosum must be absorbed; the hardened walls must be rendered soft and pliable, their elasticity restored, and the natural size of the canal re-established. If in our treatment of a case we are so fortunate as to effect such changes, the patient will enjoy all the comforts of a free passage for the urine, and, feeling himself so much at ease, will probably absent himself before the practitioner has authorized him to do so, but will return, at the end of a few months, as bad, if not worse, than he had at first been found.

To prevent relapses in strictures (all are liable to return when the treatment is discontinued too soon), occasional ap-

plications of an instrument for a long time after all symptoms have been removed are absolutely necessary. The superficial strictures will not require so long a continuance of the introduction of instruments as the deep-seated; but strictures such as I have last described require the occasional application of a bougie for months afterwards, sometimes, perhaps, for the patient's life, particularly if the case does not admit of complete cure in the first instance.

This stricture represented in the reduced drawing, Plate I. fig. 1, and which has just engaged our attention, was two inches in length; but we meet with strictures of this family much longer and more complicated. Cases occur in which the walls of the stricture are unequally thick, causing a tortuous course through it, and the mucous membrane, especially in very old neglected cases, becomes exceedingly rough. I can compare this roughness to nothing better than to a nutmeg-grater, and this hardened and contracted portion of the urethra to whipcord. Sometimes we meet in these cases with one, two, or more small, hard tumours, which are caused by a diseased condition of the lacunæ.

Plate I. fig. 2, shows a specimen of a case of twenty years' standing, in which the urethra, from the external orifice to the membranous portion, was in a state of contraction, which at length became so great that it could admit only a knitting-needle. In this sad condition a total retention of urine came on, and the patient was obliged to submit to the operation of tapping the bladder, after which operation he did not survive long, having been previously broken down in health by urinary hectic.

Strictures which occupy the entire length, or nearly so, of the urethra, and are accompanied by a disorganization of all its textures, must have been the result of extensive and neglected inflammation. The following case may be used in illustration:— A young gentleman, affected with gonorrhœa, was directed to use a strong injection of nitrate of silver at an improper stage of the disease; it caused high inflammation, swelling, and

tension of the entire penis. He made water with great difficulty and excessive pain, and there was a discharge of bloody serum. When the inflammatory action yielded to medical treatment, a profuse puriform discharge took place, and the mucous surface of the urethra, as far as could be seen through the external orifice, presented a granular appearance, resembling the palpebral conjunctiva in purulent ophthalmia. As the discharge lessened, the granular bodies became pale and small; all pain in the act of emptying the bladder soon subsided, but the stream of urine was very small. I now passed a No. 2 bougie, and continued the use of a bougie for nearly two months, gradually increasing the size, until I arrived to about No. 8. By this time the penis had become soft, and the patient's condition was greatly improved. He was now obliged to leave town, but I impressed on him the necessity of continuing the use of a bougie, which he could by this time pass for himself. I have little doubt, had this case been neglected, it would have ultimately become similar to the one just described.

I have given a description of extensive strictures in the spongy portion of the urethra, but they are not always extensive; we frequently meet with strictures situated in this structure limited in extent: I have met with some not more than half an inch in length, and which presented to the touch externally a body not larger in size than a filbert. Plate I. fig. 3, is a drawing of a transverse section of the penis immediately anterior to a stricture; no traces of the cells in the spongy portion of the urethra are to be seen, they have been effaced by an effusion into them of coagulable lymph. When I made this section the part was of a yellowish colour; the orifice of the stricture was remarkably small and round, and was surrounded by a mass of what was at first soft lymph, but had become in time a firm, unyielding substance: it was not more than an inch in length, for I could feel distinctly, by an external examination, both its extent and consistence. I did not see the poor sufferer, the subject of this morbid specimen, until very shortly before his death. Plate I.

fig. 4, represents a transverse section behind the same stricture: it shows the urethra in its natural position, with its sides nearly in contact, and not much dilated. This stricture was about five and a half inches from the external orifice. In Plate III. fig. 3, is to be seen the orifice of a stricture which is not small, compared with many strictures, but is remarkable for its shape, being transverse and unequal.

We meet with obstructions in the urethra of a very different character from what I have described, namely, a white, firm cord or cords extended across the canal, and attached only at its or their extremities. This is called the bridle stricture. In Plate II. fig. 2, there are two white bands stretched across the urethra. In Plate III. fig. 2, there are several white cords forming a plexus behind a long narrow stricture, and this is unusual to meet with where the urethra has undergone dilatation. I had in hospital for a long time the patient from whom this drawing was taken. The stricture anteriorly being very small, I was obliged to use a small-sized bougie, but could never succeed in introducing it into the bladder. The sensation communicated to the instrument was such as I never felt before or since; as I moved the point of the instrument towards the bladder, it gave the sensation as if its point entered a number of cells. I could not account for this until I had an opportunity of examining the parts after the death of the patient. By looking at the drawing the reader will see that the bands form a plexus, and lie close to the sides of the urethra; they could have given no opposition to the flow of urine from the bladder, but the onward passage of an instrument was obstructed, because the point hitched against one of these and raised it up like a valve. It was this that caused my failure in introducing an instrument into the bladder. I did not see this case until irreparable mischief had been done by the progress of the disease. There was a chronic abscess in the corpus cavernosum of the penis, and the bladder was extensively sacculated. He never had retention of urine, but emptied the bladder in a singular manner.

When the desire to make water came on, he got into the erect posture, and with a good deal of difficulty passed a little urine in a very small stream; he then knelt down, and pressed his forehead against the ground, thus forming an inclined plane from the pelvis downwards, and a second flow of urine came. The urine passed at the second effort was what was contained in the cyst, which was like a second bladder. Bridle strictures, as they have been called, have been noticed by several authors. Mr. Sharp, in his Critical Inquiries, mentions the case of a patient who died of retention of urine, and after death a white cord was found stretched across his urethra. In Alexander Morgagni's work notice is taken of this kind of stricture. I once saw, about an inch from the external orifice, a white septum stretched across the urethra with a hole nearly in the centre of it. I divided it with a bistoury, and directed a piece of a bougie to be passed occasionally, to prevent it uniting. Strictures at the orifice of the urethra are rather uncommon. I saw once a stricture of the orifice while forming,—at least, I may say, at the commencement of its formation. A gentleman some years ago called upon me complaining of a gleety discharge, the remains of a gonorrhœa. On examining the penis, my attention was attracted to a remarkable alteration in the orifice of the urethra; it was circular and thickened, and a red areola, which extended some distance on the glans, surrounded it. I directed a wash and some internal medicine, but he being obliged to leave town, I did not see him again for several months. On his second visit to me, I recognised a very great change; the orifice of the urethra had become very small, hard, and of a whitish colour; the hardness could be felt extending into the glans. He experienced great difficulty and pain in passing water, the stream of which was exceedingly small and round; and the stricture was so tight and unyielding, it would not admit an instrument larger than an ordinary probe.

Strictures at the orifice of the urethra cannot generally be cured by the same means we employ to remove them in other

parts of the canal. The operation proposed by the late Mr. Colles is a certain cure, and is easily performed: for a description of it I refer the reader to his work on the Venereal Disease.

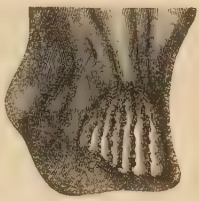
When we have opportunities of making *post mortem* examinations of strictures of long standing, many morbid alterations and changes of structure are to be seen behind them, while anterior to the strictures scarcely anything worthy of notice is to be observed, except, perhaps, an increase of vascularity, which condition often exalts the sensibility of the part, so much as to make a bougie, or any other instrument, obnoxious to it; the progress of cure is thus retarded. Lunar caustic, slightly applied two or three times to this part, will remove the increased sensibility, and will allow the treatment of the stricture to go on satisfactorily. The morbid alterations that take place behind old strictures arise from interruption to the flow of urine from the bladder; and when the bladder is obliged to exercise much force in performing its functions, the entire urinary system, the urethra, prostate gland, bladder, ureters, and kidneys, will in time become diseased. The urethra behind such strictures as afford much opposition to the flow of the urine is frequently found dilated, particularly when the stricture is seated in the anterior part of the canal: the dilatation is often observable while the patient is forcing to pass water. Advantage should be taken of this fact in cases of retention of urine, by making an incision into the most prominent part of the dilatation, and thus do away with the necessity of performing that serious operation, tapping the bladder. Some years ago a patient was brought into Dr. Steevens' Hospital, labouring under retention of urine from a stricture. Every attempt to relieve the patient by instruments failed. On examining the perinæum a tumour of an oblong shape, and with a distinct fluctuation, was discovered behind the scrotum; this tumour was opened with a lancet, and the urine flowed out rapidly and freely through the incision. After such an operation we should then pay attention to the stricture,

which will probably be removed sooner than if it had not been performed. Opening the urethra behind obstinate strictures is strongly recommended by some authors as an expeditious assistance to the method of curing them. After the stricture is removed the opening which was made in the perinæum will heal. The drawing, Plate III. fig, 1, shows a very remarkable, and, I believe, a very unusual situation for a dilatation of the urethra to be found. I am indebted to Dr. R. W. Smith for it. The preparation belongs to the Richmond Hospital Museum, and the description of it which follows is taken from the Case Book belonging to that institution. It is represented of the natural size.

"A man aged 36 had stricture of the urethra, extending from the orifice for about an inch along the canal. Behind the contraction the urethra is dilated into a sac capable of holding a walnut; and upon the under surface of this sac an opening, through which the tips of three fingers might be thrust, leads into a pouch the size of a small orange, in fact a kind of secondary bladder. It bears no inapt resemblance to an aneurismal sac. The bladder in the recent state was intensely inflamed; the lining membrane of a deep red colour, and covered with ecchymosed spots."

In dilatations of the urethra many morbid appearances present themselves in different cases; in almost every case marks of chronic inflammation exist in the dilated part; and it is more than probable that the discharge which accompanies some strictures, and which constantly continues until the stricture is removed, comes from this place. Depositions of lymph are often to be seen producing thickening and inequality of the surface; sometimes patches or stripes of ulceration are to met with, which lead at times to formidable consequences, namely, abscesses in the perinæum, and, what is still worse, infiltration of urine into the cellular tissue of the perinæum, scrotum, penis, and adjacent parts. I have also seen the entire of the dilated urethra coated over with

phosphatic deposits. In the accompanying wood-cut is delineated a small portion of the urethra, showing a complete disorganization of the mucous membrane; it is changed into a firm whitish substance of a fibrous appearance. This change of structure extended from behind the stricture to the bulb. The stricture in this case was the result of the loss of the glans penis from chancre; the subject of it died of hæmorrhage from the bladder and kidneys.



The prostate gland does not always escape in strictured patients; we find at times the whole gland enlarged, at other times one lobe only engaged. When merely a simple enlargement of the prostate has taken place, as soon as the stricture is removed the gland will generally be restored to its natural condition; but if abscesses have formed in it, the disease, being more complicated, will occupy a longer time before recovery takes place. The prostatic ducts are very often found greatly dilated: Plate I. fig. 1, and Plate II. fig. 1, show this very well.

The urinary bladder, in strictured patients, undergoes many morbid alterations when that viscus is obliged to make much exertion to relieve itself; its mucous membrane becomes thickened and thrown into folds of various shapes: good examples of this are to be seen in some of the annexed drawings. Chronic inflammation of the mucous membrane in different degrees is almost always present; we know this from the quantity and quality of the secretion passed from the bladder during life. When the chronic inflammation is not much, the discharge is thick, ropy, and as tenacious as bird-lime, and is semitransparent; but on an increase of the inflammation occurring, the discharge becomes opaque, less tenacious, muco-purulent: the quantity is often great, and causes much additional suffering to the patient while passing water. Inflammation of this membrane becomes at times very acute; marks of this are to be seen after death. In our *post mortem*

examinations we often meet with a great increase of vascularity in the mucous membrane, the vessels of which are sometimes found enlarged, tortuous, and turgid; frequently they present evident marks of extravasation. In the drawing, Plate III. fig. 2, there were signs of high inflammation and much ecchymosis; in some places the effused blood was in small spots like the petechiæ of fever, in other parts in patches as large, each, as a silver sixpence. I have a drawing which shows extravasation of blood diffused over the entire surface of the mucous membrane, which was of a very dark colour, and there was no appearance of distinct blood-vessels; on the inferior surface there was a further extravasation of blood which detached the membrane almost completely from the walls of the bladder. In this case the wretched sufferer was obliged to use powerful exertions to expel the urine; he strained and forced, like a woman in labour, for hours, nothing but mucus coming off, and when it ceased to flow, the urine dribbled away, bringing some comparative ease to the afflicted patient.

The next thing to attract our attention is, thickening of the walls of the bladder and diminution of its capacity. In some of the drawings we see good exemplifications of this. In Plate II. fig. 1, which also represents a simple stricture, with extensive dilatation of the urethra behind it; the capacity of the bladder is remarkably small. The thickening of the parietes of the bladder can be accounted for by the force that viscus is obliged to make to expel its contents; for all muscles that are called upon to exercise much constant action are increased both in bulk and strength as the result. In the case of the bladder there is probably some infiltration of lymph which adds to the thickness. Another consequence of straining to pass water on the bladder, is a protrusion of the mucous coat through some of the interstices of the muscular fibres, by which sacs or pouches are formed; sometimes we meet with three or four, at other times one large one. The large sac I have already alluded to, at page 307, was situated between the bladder and rectum; it could be felt

by passing the finger into the rectum. The bladder is at times as unaccommodating in allowing the ingress of urine from the kidneys as the stricture is in preventing the bladder to get rid of it; in consequence of which we find the ureters and kidneys frequently diseased. One or both ureters are frequently found dilated; when one only is distended, that one becomes greatly enlarged, and acts as a secondary bladder: the dilatation extends into the pelvis and infundibulæ of the kidneys. There are some preparations in the Museum of the College of Surgeons, showing absorption of the entire glandular structure of the kidney, the place of which has been supplied by membraneous pouches which are divided into cells by septa, the cells communicating with each other. The urine is occasionally interrupted in its course from the kidneys by other causes than those I have mentioned: for instance, by a calculus in, or a stricture of the ureter. The latter is, I believe, a very unusual occurrence; I met, however, with a case of it some years ago, which, though it may be a digression, I shall relate. A man was brought into Dr. Steevens' Hospital in a comatose state, the person accompanying him having stated that the patient had not passed water for four days. The abdomen was tumid. I introduced a catheter with great ease into the bladder, but scarcely any urine came away. He died in a few hours, and on the following day I made a *post mortem* examination. On cutting into the abdomen some serum was found in its cavity, and several convolutions of the intestines were adherent by the effusion of recent lymph. A tumour was discovered situated behind the peritonæum; it projected towards its cavity, and when cut into a quantity of offensive urine gushed out, thus exposing the entire cyst, which appeared to be formed by the surrounding cellular membrane. The ureter was much dilated, and an ulcerated opening into its cavity was discovered; through this opening the urine had infiltrated into the surrounding cellular membrane, and thus a cyst was formed. I introduced a probe into this opening; I could not make it pass

downwards, but it passed freely upwards, towards the kidney. I now removed the kidney and ureter. The kidney was large, soft, pale, and its pelvis greatly distended. On slitting up the ureter I found in it two strictures in the shape of ridges, evidently formed by mucous membrane, thickened by lymph; they had nearly obliterated the inferior portion of the canal. The upper part of the ureter was dilated considerably. The bladder was nearly empty, and I may be asked why was this so? Sympathy, perhaps, may have been the cause of it; but this solution of the question will not always hold good, for there are many well authenticated cases in which one kidney has acted vigorously, the other being rendered completely incompetent by disease.

There is another curious circumstance connected with this case, which resolves itself into a question difficult to be answered,—why did not the urine produce the same deadening effects on the cellular membrane in this instance, as it does when infiltrated into the cellular membrane of the perinæum, scrotum, and penis? We find that the ureters suffer from other diseased alterations besides dilatation. The chronic inflammation, which so generally affects the lining membrane of the bladder in cases of old strictures, is often continued to the mucous membrane of the ureters, there producing the same actions and the same effects as it does in the bladder; from the ureters this chronic inflammation extends through all the ramifications of the tube into the kidneys, and thus many morbid changes in these important organs are the result. It is at times difficult, if not impossible, to detect diseases in the kidney, particularly in their early stages; indeed there are even cases on record in which disease of that organ was found far advanced without any decided notification of its existence during life having been manifested. They appear disposed rather to simulate the complaints of other parts than to expose their own maladies; for instance, incipient psoas abscess, affections of the liver, but more frequently functional derangement

of the bladder and urethra, evinced by a frequent and irresistible desire to pass water; and sometimes pain in or about the glans penis, which frequently causes suspicion of the existence of a stone in the bladder. In *post mortem* examinations of such cases as the last, one or both kidneys have been found completely disorganized, and the bladder and urethra free from any marks of disease.

While we are treating urinary diseases, such as strictures or diseased prostate glands, we should look sharply to, and watch closely the renal glands; and if the patient complains of pain in the region of these glands, which pain occasionally proceeds in the direction of the ureters, and that this is increased by a sudden jerk from the motion of a car, or from a false step, I think we may then say, without having recourse to analysing the urine, or without looking to the state of the digestive organs, that all is not right with the kidneys, and the sooner we direct our treatment to them the better.

I will not proceed further in considering affections of the kidneys; it would be going beyond the object I had in view in sending to the profession these few observations, which were written mainly with a hope of exciting a spirit of inquiry into the pathology of organic strictures,—a subject very much neglected. There are few diseases which have not undergone close examination, and pathological anatomy has been most successful, and has amply repaid the labours of pathologists. I am sorry I cannot say the same for strictures of the urethra. It must be acknowledged that in these diseases the number of *post mortem* examinations are comparatively limited, and this fact is urged by some as an excuse for not exerting themselves. But if our opportunities in this respect be few, we should be more energetic, more diligent, and more watchful, in looking for cases, which, when obtained, we should turn to the very best account. I have often seen *post mortem* examinations of strictures of the urethra very slovenly conducted, and turned to little account; the investigators having gone away, apparently satisfied, with-

out having, I am certain, added anything material to their knowledge of these diseases. I am not, I believe, over-zealous about the necessity of studying the pathology of urethral stricture, for on it depends a judicious, safe, and successful treatment; and I may further add, that without such information of the disease in question we cannot form a sound prognosis.

It must be evident to every surgeon who has studied the pathology of strictures, that the same mode of treatment is not applicable to every stricture, but must be modified by its situation and extent, by the tissues engaged in its formation, and by its consistence. I believe there are many practitioners who do not interest themselves on these points, but who use the same kind of instrument in every case. I can say for myself that I find, in my practice, use for almost all the instruments which have, from time to time, been invented for the removal of strictures. The plaster bougie, which is a very old instrument, is both safe and useful; it is a great favourite of mine, and the more I use it the more I feel convinced of its value. It is applicable in cases of recent strictures, before they become hard and unyielding; I have succeeded with it in recent strictures even at or behind the bulb. In general, however, this description of instrument is more suitable to strictures anterior to the bulb. When we use one of a middle size we should give it the curvature of a catheter, and when well made on linen it will retain it during introduction, if we do not employ too much pressure. A small-sized plaster bougie must be used straight; such an instrument is very apt to bend on itself when it meets with resistance; and if the pressure on it be continued it becomes twisted into a spiral shape, or coiled up into a knotted mass: in this shape there is often difficulty in withdrawing it, which is attended with a good deal of pain, followed by the discharge of some blood. I think it not difficult to know whether a small bougie is passing on or bending. When the bougie is shortening from having passed through the stricture,

and advancing towards the bladder, there will be a total absence of the feel of resistance at its point; but if the shortening of the instrument be caused by its bending, then the more it shortens the greater the resistance becomes. We see, in the annexed wood-cut, three bougies greatly altered by the effects of pressure. The gum-elastic bougie answers very well in long strictures, and in such as do not require a curved instrument.

We meet, at times, with strictures through which we are able, after some weeks, to make a passage sufficiently large to admit a No. 4 or 5 catheter, but beyond this we advance very slowly. If, under these circumstances, our patient would submit to lie in bed with a gum-elastic catheter in the bladder, the cure would go on rapidly and satisfactorily; and on removing it, after the lapse of three or four days, we will be surprised to find that it comes out so much more freely than it went in, and the stricture will now admit a much larger instrument. At each time you take out the instrument you will be able to replace it by a much larger one; and in this way, if the presence of the instrument in the bladder does not cause pain or irritability of the organ, the entire stricture will be removed in perhaps three or four weeks. In such cases it is particularly necessary to pass an instrument occasionally, to prevent a return of the disease. The catgut bougie is an useful instrument: I employ it very often. The metallic catheter and sound are useful instruments in judicious and practised hands; many old and obstinate strictures, in which every other instrument would fail, are cured by them. We have great command over these instruments; by moving them be-

tween our fingers we can direct the point to any part we wish, and in this way we succeed in passing through strictures of unequal thickness, or where there are more strictures than one, whose orifices do not lie opposite each other. These instruments are most essential when the strictures are at or behind the bulb.

The catheter and sound, though capable of doing so much good when in safe hands, are, I am sorry to say, made weapons of destruction sometimes. It is surprising, after all that has of late years been written against the employment of force in the treatment of strictures, that it should be still put in practice by a few; it is not, however, done by any well-educated surgeon. Rigors, hæmorrhage, and false passages, are the consequences of using force with strictures. Rigors, however, we meet with where no violence has been employed, and in some cases they are present before any treatment has been adopted. The cold stage that attends the febrile paroxysm is often severe; the hot stage is generally short; but the sweating stage is profuse, often continuing for many hours, sometimes for days. Great debility follows these attacks. I have met with cases in which there was a cold and a hot stage, without being followed by sweating; in these a second cold stage comes on without going further. In cases in which there is a predisposition to rigor, we should give a large dose of opium before we use an instrument; and if this does not succeed in preventing the occurrence of the attack, opium should be administered both before and after its application. If this plan fails we must leave off the local treatment for some time, and attend to the patient's general health. Patients who have suffered several attacks of rigors are pale, their countenances haggard, and their strength reduced; these persons will be improved by good air, generous diet, wine, and tonic medicines: when this plan has restored the health of the patient we may return to the local treatment.

Hæmorrhage from the urethra, after the use of instruments, is rather unpleasant; it alarms the generality of patients, and

they are inclined to attach some blame to the surgeon for it. Blood sometimes comes in large quantities and rapidly, though the surgeon be not in fault; in such cases the urethra must be unusually soft and vascular, and its vessels varicose. A gentleman called upon me some years ago about a stricture, which, he said, was very near the bladder; he addressed me thus: "I came, Sir, to know can you do anything for me without using an instrument?" I asked him what objection he had to its use? He replied: "A profuse bleeding always follows." I was vain enough to think I might apply an instrument without drawing blood, and on intimating to the patient my wish to try it, he consented, provided I would use a plaster bougie; at the same time he said, "I know the consequence." I introduced into the urethra a soft plaster bougie, well oiled, and it went on without any opposition; when I arrived at the bulb I perceived blood flowing along the sides of the instrument, on the withdrawal of which blood gushed out in a large round stream: it stopped almost immediately. I never met with a similar case before or since, nor do I know any one who has. In general, bleeding from the urethra does not continue long; if it should be disposed to continue, cold applications and rest will generally arrest it; pressure may become necessary, and when employed, it should be made upon and behind the point from which the blood comes. When bleeding from the urethra is the result of violence,—for instance, when extensive false passages have been made,—it is often alarming, and is difficult to control; and what complicates the case is the regurgitation of some blood into the bladder.

When we visit pathological museums we often see specimens of false passages caused by rude and unskilful hands. In the Museum of the College of Surgeons there are some remarkable preparations of false passages. I shall mention two, and I believe it would not be easy to match them. In one the catheter was forced out of the urethra anterior to the stricture, and by some extraordinary effort was made to re-enter it behind the stricture.

In the other specimen there are four false passages, three of which were made through the prostate gland into the bladder; in the fourth the catheter was forced through the bulb, and passed between the bladder and rectum. I saw one melancholy example of this last kind of injury, which terminated fatally in forty-eight hours: a silver catheter had been forced through the bulb of the urethra, and had passed on between the bladder and rectum. The feeling as of something giving way, the shortening of the instrument, the capability of depressing the handle, and the freedom with which its point could be moved, were circumstances which made the operator suppose that the instrument was in the bladder, and that the absence of urine arose from the eyes of the catheter being blocked up with coagulated blood or mucus: on withdrawing the instrument, however, the eyes of it were found perfectly free. Whenever false passages, no matter how limited, have been made, the local treatment should be suspended for some time to allow the breach to heal.

Strictures are said to be cured by dilatation; but if the instrument which produces their dilatation did nothing more, strictures so treated would never be permanently cured, for as soon as the dilating power would be removed the stricture would return to its previous state. We should not, I think, be so mechanical in our notions as to the cure of strictures, but recollect that the catheter, sound, or bougie, whichever of these instruments is used, is brought in contact with, and presses upon, living organized parts, which pressure, acting as a stimulus, excites the absorbents into action, and thus the deposits which formed the stricture are removed, and the natural caliber of the urethra becomes restored. We meet at times with strictures through which the very smallest instrument cannot be passed, though some stream of urine escapes; these are sometimes cured by well-regulated pressure exercised on their anterior extremity by the bougie or catheter. The practice of some is to pass down to the stric-

ture a good-sized gum-elastic catheter, and to retain it there by means of bandages. To maintain, however, constant pressure against the stricture by this mode is almost impossible, owing to the great mobility of the parts; and I have seen, as a consequence of the instrument pressing upon the sound part of the urethra, instead of against the stricture, inflammation and abscesses in the perinæum. I have effected some cures of impassable strictures by introducing a tolerably large gum-elastic catheter or bougie (the selection, as to its shape, depending upon the situation of the stricture), and pressing it against the stricture for fifteen or twenty minutes every second day. The process of cure is, I must acknowledge, a very slow one; but if a patient objects to it on this ground, he must either submit to an operation or abandon himself to a life of misery. When a cure is effected by pressure made against the face of a stricture, we are indebted here also to the absorbents for it. It is a well-known fact that newly-formed parts have not the same power to resist stimuli as the original parts had; and it is owing to this law in the animal economy that the absorbents are such successful agents in curing strictures. We have in the case of recently healed ulcers a familiar example of the want of power possessed by newly-formed parts to resist the application of stimuli. When a stimulus is applied by accident or design to such ulcers, the absorbents will, in a few days, destroy what has been the work, perhaps, of months.

Lunar caustic is now very little employed for the cure of organic stricture. It is certainly capable of doing much mischief when indiscriminately used: rigors, hæmorrhage, retention of urine, inflammation of the urethra, and abscesses, being the result; it may, however, be used with advantage when a proper selection of cases is made. It is often of great utility in removing the spasm, which so frequently impedes our treatment of a case; it also subdues that morbid sensibility which we sometimes meet with anterior to the stricture, and which causes a delay in the progress of the cure. Two or

three applications of it will, in general, remove these two unwelcome visitors. There are some strictures limited to a very small extent, which may be cured by the application of caustic, and I think it would be of use in the bridle stricture; but I know of no diagnostic means by which that can be distinguished from other obstructions in the urethra. While we are interested about the local treatment of stricture we should not forget the constitution. Few persons labour under stricture for any length of time without becoming delicate and being easily put out of order. Some patients suffer from dyspepsia and derangement of the bowels, others are affected greatly by atmospheric influence; the latter feel every change of weather, and cold or wet, particularly in the feet, will often suddenly aggravate all their symptoms. The cure of strictures generally goes on more steadily and more uninterruptedly in summer and autumn than in winter or spring. Before commencing our local treatment of a case of stricture, we should lay down general rules for the conduct of the patient. We should regulate his diet, and should point to the necessity of caution in eating or drinking anything that might disagree; this is particularly required if the patient be dyspeptic. Attention to the bowels, warm clothing, and the avoidance of over exercise, are observances the necessity of which should be impressed eagerly upon the mind of the patient. I have not entered into the details of the treatment of stricture, because it was my intention at the outset to make only a few remarks on that subject as far as it is applicable to the strictures I have described. I find, however, I have insensibly gone somewhat beyond my object.(*a*)

(*a*) The plates which accompany this paper were drawn on stone by Mr. Connolly; the figures, with one exception (Plate III. fig. 1), are reduced about one-half. The mechanical arrangements necessary in the plates has led to the description of the figures not being quite consecutive in the text.—Ed.

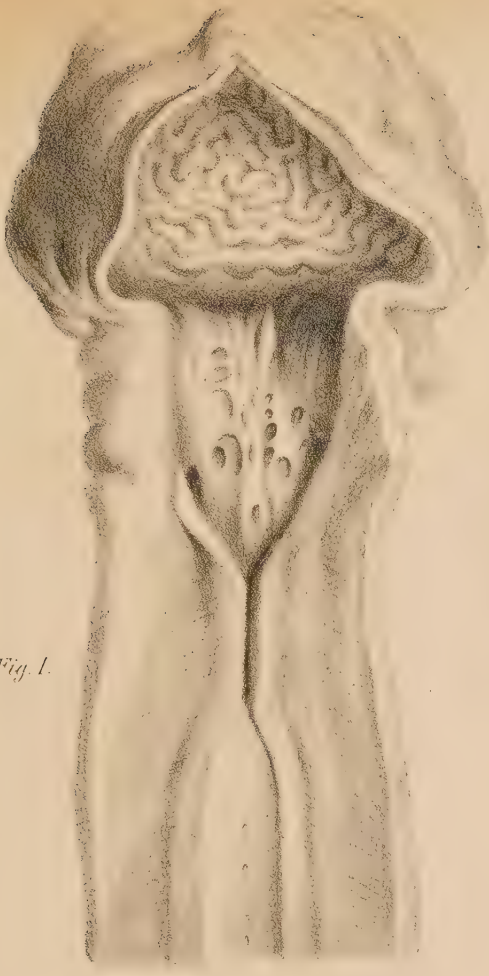


Fig. 1.

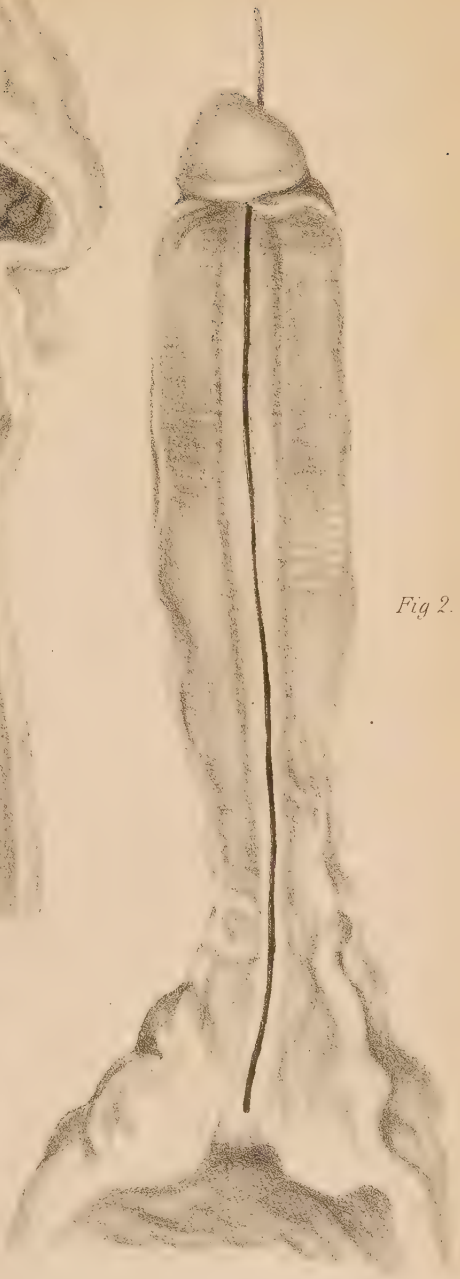


Fig 2.

Fig 4.

Fig 3

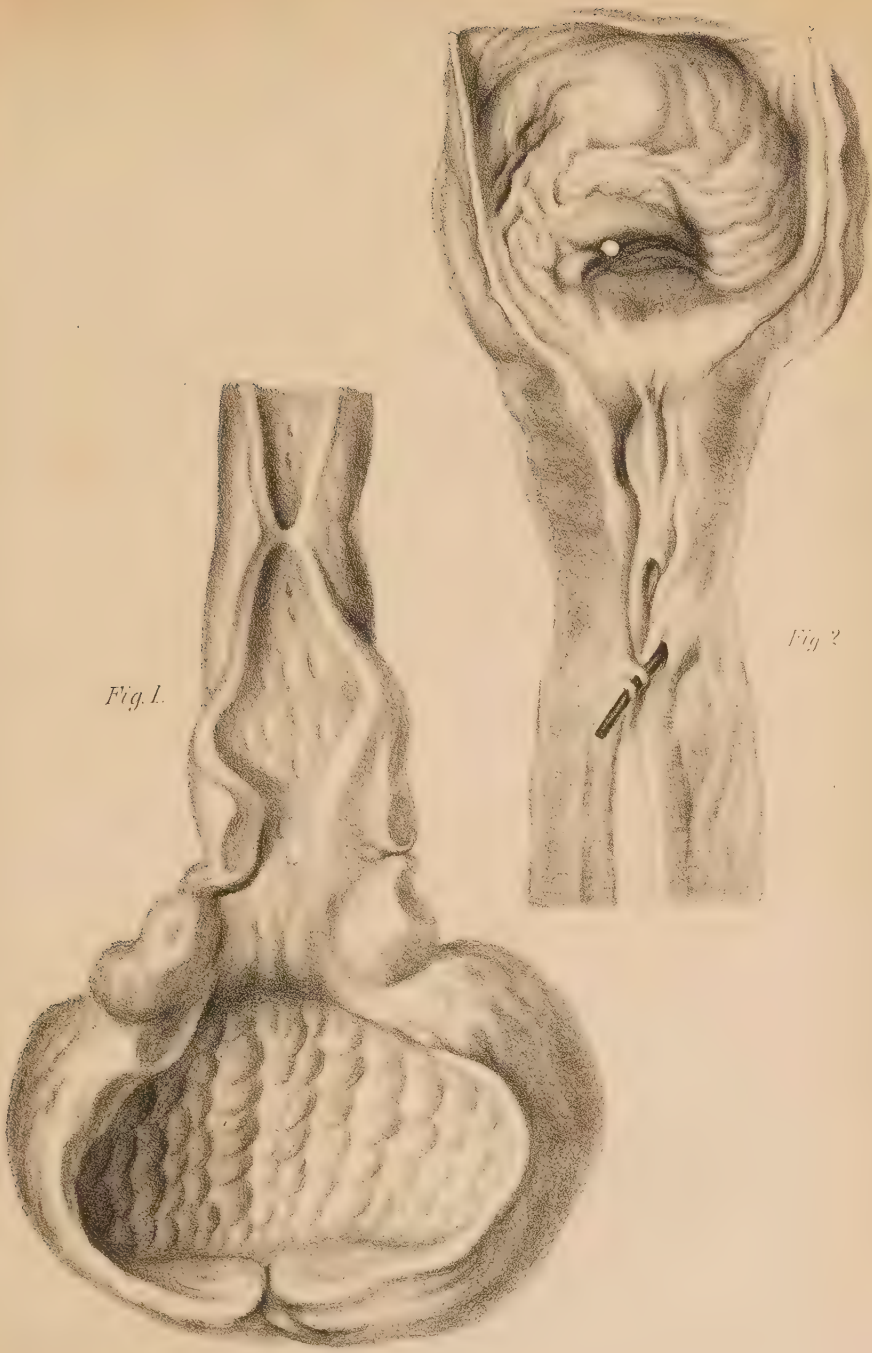


Fig. 1.

Fig. 2

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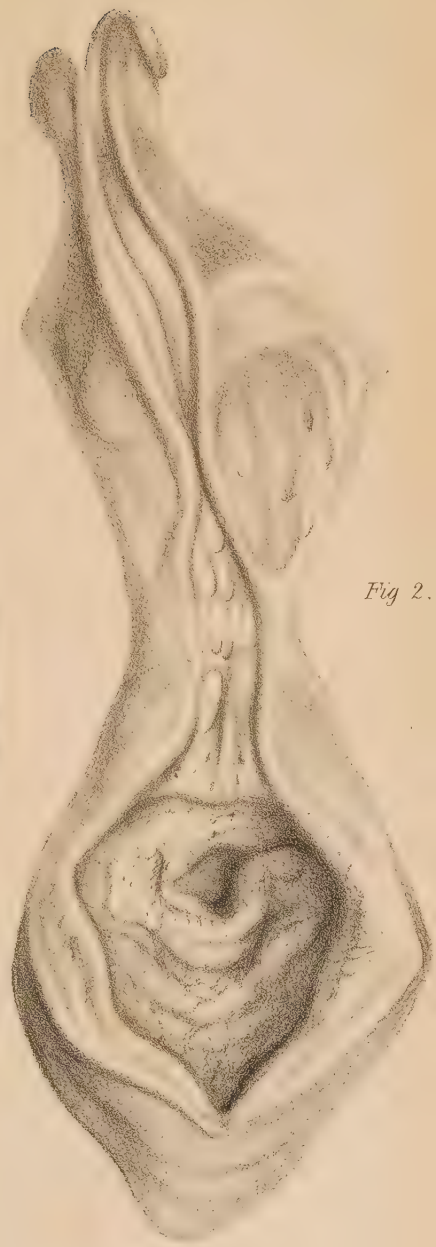


Fig 2.

Fig. 3.

Art. IX.—*Case of Strangulated Congenital Hernia in an Infant seventeen Days old, requiring Operation.* By W. Fergusson, Esq., Professor of Surgery in King's College, London.

[Read at the Royal Medico-Chirurgical Society of London, Jan. 12, 1847.]

On the evening of Sunday, the 8th of November, 1846, I was asked by Mr. Davidson, of Charles-street, Manchester-square, to see an infant patient of his labouring under strangulated hernia. The child was seventeen days old, and had been perfectly well until the evening of the 6th, when it suddenly became fretful; and from that time up to the period when seen by Mr. Davidson, about half an hour before he called upon me, its sufferings seemed to increase. The symptoms of strangulated hernia were these:—a painful tumour in the region of the left inguinal canal; swelling and tenderness in the abdomen; no evacuations from the bowels since Friday evening; and frequent vomiting in the course of the last twelve hours. The skin over the tumour was red and œdematous, and the slightest manipulation evidently caused great pain.

Mr. Davidson had tried the taxis in the warm bath with no good effect; and on applying my own fingers, I at once felt assured that, while there was little chance of reducing the supposed hernia in this manner, there would be great additional suffering, and possibly risk of doing serious harm. The indications seemed sufficient to warrant an immediate operation with the knife; and, as the parents at once assented to a proposal of the kind, I lost no time in putting it into execution. The little patient was held on a table by his nurse, and the operation was effected thus:—An incision, about two inches in length, was made along the most prominent part of the tumour, passing obliquely from opposite the opening in the fascia transversalis to within half an inch of the lower part of the scrotum. When the skin and subjacent cellular tissue was divided, a firm membrane, of a dark-blue colour,

which I took to be the hernial sac, was discovered, and cautiously opened. About a tea-spoonful of turbid serous fluid escaped, and on enlarging the aperture a portion of small intestine was immediately exposed. The opening was now increased, to permit the finger to be pushed in the direction of the stricture, and the testicle, partially covered by the gut, was then observed at the lower end of the hernial sac. The point of a director was next cautiously passed under the front of the neck of the sac; and a probe-beaked bistoury was used to make a slight notch in this part. The bowel was easily pushed into the abdomen, and the wound was then stitched and dressed in the ordinary way. The patient soon after went to sleep: in the course of three hours there was a copious evacuation from the bowels, and all suffering seemed to have ceased. The greater portion of the wound healed by the first intention; a slight film of slough separated from the surface of the testicle. In the course of a fortnight there was a firm cicatrix, with no apparent tendency to further protrusion; and the child is now thriving and in excellent health.

The incision in the skin bled very freely, owing to the inflammation present; and the tightness of the stricture had so far impeded the circulation in the cord and testicle that the veins were greatly distended. The colour of these parts was purple. The testicle was somewhat swollen, and, in appearance, not unlike a small sloe.

As regards the anatomy of the parts, this case of congenital hernia differs little, if at all, from what is familiarly known among surgeons. The testicle had not passed completely into the scrotum, as may be often remarked in congenital hernia; the condition being probably the cause of the vaginal prolongation of the peritonæum not closing.

It is the prevailing opinion, I believe, that inguinal hernia in an infant is usually congenital. This is not always the case, however: I have an example of very large protrusion of intestine in a boy only two years of age, wherein the dis-

tinction between the tunica vaginalis testis and the proper hernial sac is clearly displayed; the condition being similar to that met with in the adult, in whom the peritonæal prolongation has been long closed up. Though it is interesting, in a pathological point of view, to know the distinctions between congenital inguinal hernia and the common kind, I am not disposed to think it of such consequence that, in an instance where an operation is absolutely necessary, the surgeon should be positively clear in his diagnosis as to the sort of rupture he is about to deal with. The same style of operation is required in either instance; and in cutting on the front of the neck of the sac to relieve the stricture, I believe it is easiest, safest, and best to make the incision directly upwards.

I trust that I need not apologise to the profession for having occupied some space in bringing under notice a case which, though seemingly of such familiar occurrence, has, it appears to me, some points of interest; and the very early age of the patient causes it to differ from most, if not all, analogous cases with which the profession generally is acquainted. I have never myself seen the operation for strangulated hernia performed on any patient under the age of puberty, excepting in this instance, and few surgeons have had occasion to use the knife in infants thus affected. Mr. Adams of Dublin(*a*), having operated successfully for strangulated congenital inguinal hernia on an infant eighteen months old, thought the case worthy of being recorded; and states, in his paper on the subject, that the only example of a successful proceeding of the kind which he has found recorded had happened to Mr. Long in St. Bartholomew's Hospital, in a child only fourteen months of age. Mr. Lawrence has referred to Mr. Long's case, as an instance wherein, at this early age, the hernia was not of the congenital sort, for the tunica vaginalis testis and hernial sac were quite distinct. Mr. Stanley, we are told by Mr. Lawrence, has ope-

(*a*) Dublin Journal of Med. Science, First Series, vol. ii.

rated successfully on an infant of seven months,—and here too the hernia was not congenital. Several other examples are referred to by Mr. Lawrence in his Treatise on Ruptures(*a*), where strangulated hernia had been present in very young subjects, some having died without operation, others having been operated on successfully, and one, a child of six months, having died of profuse diarrhœa in forty-eight hours afterwards. Mr. Curling has politely mentioned two cases to me: one occurred to Mr. Luke, in a child three months old; an operation was performed, the hernia was reduced without opening the sac, and the patient recovered. The other was an instance operated on with success by Mr. Hawkins, at St. George's Hospital, at the age of seven weeks. Mr. Laurence has given some particulars of a case which happened to Dupuytren: an operation was performed on an infant twenty days old, but the result is not mentioned. Among the various professional friends whom I have met recently, I have not found that any of them were acquainted with an instance of an operation having been performed at an age so early as that of the patient whose case I have here recorded. It is chiefly for the sake of eliciting more information on the subject that I give the case this publicity, and also to impart confidence to others who might hesitate to advise an operation on one so young.

Art. X—*Observations on certain Dislocations of the Elbow-Joint; with Cases.* By M. H. Stapleton, M. D., M. R. I. A., Surgeon to Jervis-street Hospital.

Hippocrates has left us many interesting observations upon dislocations of the elbow, from which we learn that he was not only acquainted with accidental luxations of that joint, as regards both bones of the fore-arm, but likewise with the dislocations of the head of the radius alone. From his time to the

(*a*) Page 79, fifth edition.

present day injuries of or about this joint have continued to interest the profession, on account of the difficulty which is often attendant upon their diagnosis, and the very unpleasant results likely to arise to the patient, should an error have been committed.

Although we are much indebted to Sir A. Cooper for his very elaborate work on Fractures and Dislocations, and by which he, in a great measure, led to the proper understanding of these accidents, still the diagnosis of dislocations of the elbow-joint is surrounded by considerable obscurity, as cases occasionally occur which differ in their form and symptoms from those described in his work. He specifies five varieties of dislocation of the elbow-joint:

1. Dislocation of both bones of the fore-arm backwards.
2. Both bones dislocated laterally.
3. Dislocation of the ulna backwards.
4. The radius dislocated forwards.
5. The radius dislocated backwards.

The classification of M. Debruyn(*a*) I consider to be nearer the actual truth; it is:

Dislocation of both bones of the fore-arm.

1. **Backwards.** — Complete. / Incomplete.
2. **Forwards.** — With fracture of the olecranon. / Without fracture of the olecranon.
3. **Dislocation of both bones of the fore-arm at the same time; the radius forwards, and the ulna backwards.**
4. **Outwards.** — Complete. / Incomplete.
5. **Inwards.** — Complete. / Incomplete.

Dislocation of the ulna backwards separately from the radius:

Dislocation of the superior extremity of the radius alone.

1. Backwards.
2. Forwards.
3. Outwards.
4. Incomplete.

(*a*) *Annales de la Chirurgie Française et Etrangere*, Septembre, 1843.

The forms of dislocation of the bones of the fore-arm, in dislocation of the elbow-joint, described by Hippocrates(*a*), are:

Dislocation of the radius backwards.

Dislocation of the radius forwards.

Dislocation of the radius outwards and upwards.

Incomplete lateral dislocation of the ulna.

Complete lateral dislocation of the ulna.

Dislocation of the ulna backwards.

Dislocation of the ulna forwards.

In the classification of Sir A. Cooper we have no mention made of a partial dislocation of both bones of the fore-arm backwards. Prior to the time of Boyer(*b*) this form of dislocation was admitted by many; he, however, denied its possibility, and expresses himself as follows upon this subject:

"Dislocation of the fore-arm backwards can never be incomplete. If the summit of the coronoid process of the ulna was not forced, by the effort which causes the displacement, beyond the transverse diameter of the articular pulley of the humerus, the latter, on account of the obliquity of its surfaces, would fall back into the sigmoid cavity of the ulna when the effort at displacement had ceased. The coronoid process is drawn by a similar mechanism into the fossa of the humerus intended for the lodgment of the olecranon process, if it shall have advanced beyond the aforesaid point."

J. L. Petit(*c*) was not so dogmatic. He admits the possibility of a partial dislocation. "When," says he, "the dislocation backwards is incomplete, and that the anterior eminence of the ulna rests posteriorly upon the most prominent part of the pulley of the arm bone, then, under such circumstances, the flexors are less tense, the extensors are less relaxed, and consequently the fore-arm is less flexed than in complete luxation backwards."

(*a*) Hippocrates, vol. iii. p. 545. (*b*) *Mal. Chir.*, tom. iv. p. 214.
(*c*) *Mal. des Os*, tom. i. p. 233.

Certain cases having fallen under my notice must plead my excuse for differing with so high an authority as Boyer, and induce me to follow the opinions of Petit, which are in accordance with those of Monteggia and Leveillé, and which are, moreover, confirmed by the observations of Malgaigne,(*a*) who declares that the incomplete or partial dislocation is by far a more frequent occurrence than the complete. The description given by him is, "that the coronoid process of the ulna lies upon the inferior part, and a little posteriorly of the pulley or trochlea of the humerus; the fore-arm is scarcely at a third of its flexure; the olecranon process is an inch and a half behind the epitrochlea, but upon a horizontal plane perceptibly inferior to it; whilst, in the complete dislocation, the coronoid process of the ulna being lodged in the cavity usually occupied by the olecranon, the olecranon is found almost equally distant from the epitrochlea, and posterior to it, but upon a plane, and evidently superior to it."

Case I.—*Incomplete Dislocation of the Ulna backwards.*

John Boyd, aged six years, was brought by his mother to Jervis-street Hospital on the 29th of November, 1847. She stated that the child had fallen whilst carrying a kettle of water on the previous evening, and complained very much, during the night, of pain in his left elbow. The child supported his injured arm with his right hand : it was at about a third of its flexion; pronation and supination were perfect. Complete extension was impossible, nor could the limb be completely semiflexed, and when attempted, the boy screamed out that his little finger was hurt. He had no power over the elbow-joint. The only account we could elicit from him was, that he slipped and fell, with his hand under him. There was no deformity on the external side of the joint ; the head of the radius could be felt to rotate in its normal position.

(*a*) *Trait d'Anat.* tom. ii. p. 454.

On the inner and posterior part of the joint there was considerable deformity; the olecranon was thrown to the inner side, but on a plane inferior to the epitrochlea. On each side of the triceps there was an elastic swelling, but that on the exterior side was much the larger; the prominence in front was below the fold of the arm. There was scarcely any ecchymosis. Extension being made in the opposite direction, I pushed the olecranon forward with my thumb, and in about two minutes I suddenly bent the child's arm round my own, which acted as a fulcrum. The reduction was easily accomplished. The fore-arm could now be flexed to the fullest degree, and the child had the full command of the joint.

It was evident to all present that the radius was in its normal position in this case, and that the external condyle preserved its proper position with regard to the shaft of the humerus. The great pain in the little finger was produced by the tension of the nerve. It was not fracture of the internal condyle, as the fore-arm could not be bent to a right angle, nor the ulna made to resume its natural position. That there was a displacement backwards of the ulna cannot be disputed. Was it a complete or incomplete dislocation? I should say that it was incomplete, as the coronoid process was not thrown into the posterior fossa of the humerus. An interval of so many hours having elapsed from the occurrence of the accident until the child was brought for advice, the diagnosis would have been extremely difficult, were it not for his slight muscular development and the anæmic state of his constitution.

Case II.—*Incomplete Dislocation of Radius and Ulna backwards, with Fracture of both Bones, in their middle Thirds.*

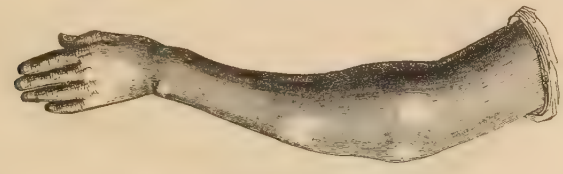
Thomas Phelan, aged ten years, was admitted on the 5th of August into Jervis-street Hospital. He stated that, while endeavouring to pick some sugar from a hogshead which was upon a dray, he mounted upon the wheel, but, seeing the driver return, jumped suddenly down, and fell upon his side; on get-

ting up he found his arm was very much hurt, and one of his companions pulled it until it cracked.

On his admission he was found to have fractured both bones of the fore-arm in their middle third. The limb was painful, and very much swollen.

On the 6th he complained of much pain about the elbow-joint. There was also considerable ecchymosis. He was very unwilling to permit any examination of the limb, as he had but recently suffered from a dislocation of his shoulder-joint. Leeches were applied to the arm, above the ecchymosed part, and a poultice over the joint. The leeches were repeated on the 12th.

13th. The pain being now somewhat abated, he permitted an examination. As he lay on his back, the fore-arm was pronated, and his hand rested on his abdomen, midway between the pubis and umbilicus. By pressing the finger over the situation of the head of the radius it was found to project more than natural, but could not be rotated, as the bone was fractured. The olecranon was thrown backwards, but on a plane horizontally inferior to the internal condyle; anteriorly and internally there was a round projection, as shown by the accompanying illustration.



16th. The reduction of the limb was effected in the following manner:—the patient was seated upon a low stool, with his arm placed across the back of a chair; extension was made by grasping the fore-arm above the seat of fracture, while an assistant pushed forward the ends both of the olecranon and radius with his thumbs, and made counter-extension by locking his hands on the front of the limb.

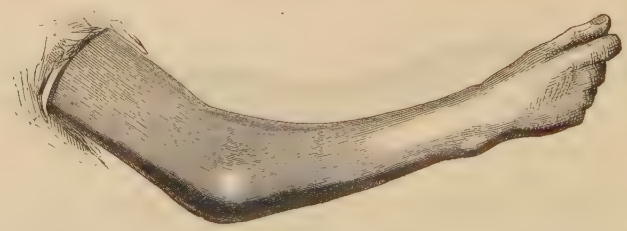
After about two minutes the joint was bent across the rail of the chair, and the bones returned to their normal position, which was satisfactorily proved by the limb allowing of perfect flexion and extension.

The arm was now placed in splints, and treated as the symptoms required. On the 3rd of September he was discharged.

Case III.—*Incomplete Dislocation of the Radius and Ulna backwards.*

Thomas Kelly, aged twelve years, was admitted into Jervis-street Hospital on the 10th of November, 1846, for an injury of the elbow-joint. The history he gave of it was, that while riding a pony about five days previously the animal suddenly stopped, then turned round, and threw him; and that in falling he put out his hand to save himself.

The injury had been pronounced to be a fracture of the external condyle. Cold applications and leeches were applied. When I first saw him he was lying on his back, with the fore-arm in a state of pronation, and the hand resting on the abdomen, about midway between the pubis and umbilicus. This woodcut, taken from a plaster cast, exhibits the state of the parts.



From the similarity of position and appearance of the joint, it immediately struck me that the state of the elbow in this case was the same as in that of Phelan, which, on further examination, proved to be correct. The reduction of the dislocation was effected by an assistant passing his arm round that of the patient; extension of the fore-arm was then made by grasping

the hand, and rotating it outwards: in about a minute the head of the radius was seen to assume its proper position, and the fore-arm being suddenly bent, the olecranon immediately resumed its natural position. The fore-arm could now be flexed and extended, and also supinated and pronated.

Neither the second nor third cases answer to the following description of dislocation of both bones backwards, as given by Sir A. Cooper: "This dislocation is strongly marked by the great change which is produced in the form of the joint, and by its partial loss of motion. The shape of the elbow is altered, as there is considerable projection posteriorly formed by the ulna and radius. On each side of the olecranon appears a hollow, and a considerably hard swelling is felt at the fore part of the joint, immediately behind the tendon of the biceps muscle, formed by the lower extremity of the humerus; the hand and fore-arm are supine, and cannot be rendered entirely prone: the flexion of the joint is also in a considerable degree lost."(*a*)

Boyer(*b*) tells us "the symptoms of a complete dislocation of both bones of the fore-arm are numerous and easy of recognition. The fore-arm is more or less flexed proportionally as the ulna and radius have ascended upon the lower extremity of the humerus. It is equally impossible to extend or flex the fore-arm further, and any endeavour to do so gives the patient extreme pain. Sometimes, however, the fore-arm possesses considerable freedom of motion in every direction, but this depends upon extensive laceration of the ligaments. On the anterior part of the arm a prominence is formed by the inferior extremity of the humerus. The olecranon, which, in the natural state of the articulation, and when the fore-arm is flexed, is on a level with the external condyle of the humerus, and inferior to the internal, is situated on the contrary when the dislocation exists above these tubero-

(*a*) Edition by Bransby Cooper, p. 440. (*b*) *Mal. Chir.*, tom. iv. p. 217

sities, notwithstanding the flexion of the fore-arm. This change of position of the olecranon relatively to the tuberosities of the humerus is more defined in thin persons than in those who are fat, or in those in whom there is much muscular development. It alone will suffice to point out the accident, and consequently is worthy of the greatest attention. If we add to the above-mentioned symptoms the fact of the patient having fallen upon the palm of his hand, and the pain which he suffers in the elbow-joint, with the total want of power, it will be almost impossible to mistake the accident. Such, however, has frequently occurred, and we ourselves could relate many like examples of false diagnosis, always followed by unhappy consequences."

The fourth case, to be detailed subsequently, agrees with the description given by Sir A. Cooper. But in the second and third cases there was not that considerable projection of the ulna and radius. It might be urged that the projection of the olecranon was not so great as laid down by Sir A. Cooper, the accident having occurred in a child, at which period of life the olecranon is not so developed as in the adult; the distortion was consequently not so great as what we imagined that it ought to be. But this fact having been allowed for, the olecranon did not project as it would have done in a complete dislocation ; add to which, it was found upon a plane horizontally inferior to the condyles.

Boyer(*a*) lays it down as a rule, that the fore-arm is more or less flexed, in proportion as the ulna and radius have ascended upon the lower extremity of the humerus.

There was but little flexion in the cases of Phelan and Kelly, consequently there could have been but little displacement upwards of these bones.

Again, it may be urged, that the limb, in dislocation of both bones backwards, may not be flexed, but straight.

(*a*) *Mal. Chir.*, tom. iv. p. 217.

True it is that such may be the case ; but when this happens, there must have been considerable laceration of the ligaments, as also of the muscles on the anterior part of the joint, at the time of the accident. When such is the case, the power of the triceps not being counterbalanced, the fore-arm is kept in a state of permanent extension.

We find no mention made by Boyer as to the state of supination or pronation of the hand or arm.

Bichat(*a*), with most of the French writers, describes the hand as being pronated ; but adds, that he has found in the observations of Desault *many* cases in which the hand was supinated.

Could the cases Nos. 2 and 3 have been dislocations of the ulna backwards, "in which accident the limb is much deformed by the contortion inwards of the fore-arm and hand?" I think not,—for the finger could be pressed into the hollow cup of the radius ; nor were these cases of dislocation of the radius forward, in which accident the hand is in a prone position, as the cuplike cavity of this bone was perceptible posteriorly(*b*).

(*a*) *Œuvres Chir. de Desault*, tom. i. p. 388.

(*b*) In the fifth volume of Guy's Hospital Reports, Mr. Hilton writes: "Knowing that the dislocation forwards and upwards sometimes baffles the best efforts of the most experienced surgeon;—and finding that in the dead arm, with all the muscles taken away, I was yet unable, by pulling at the hand, to reduce the dislocation, I extended the fore-arm, and then placed a fulcrum, in the form of a piece of wood three quarters of an inch in diameter, across the front of the elbow above the head of the radius, where I secured it deeply buried. I then forcibly bent the fore-arm towards the humerus, making my efforts (by pushing) entirely on the posterior part of the ulna alone, without grasping the arm. The fulcrum introduced (of a diameter rather more than equal to the abnormal elevation of the radius) between the head of the radius and the external condyle prevented the radius reaching the condyle, but did not interfere with the complete flexion of the ulna; and by the time the ulna reached its extreme flexion the head of the radius had resumed its proper position with regard to the external condyle, and so the luxation became reduced." He relates the case of a little boy who came to the surgery of Guy's, with a dislocation of the radius forwards and up-

The accident was not a fracture, in which the condyles of the os humeri are sometimes obliquely broken off just above the joint,—for when such is the case, the olecranon keeps its true position with regard to the condyles; and moreover, the tumour in front *was below the fold of the arm*, whilst in fracture it is above it.

Both Phelan and Kelly had fallen upon their hands. Boyer says, the patient having fallen upon his hand will help the diagnosis of the complete dislocation backwards; consequently we may infer that it will be of like assistance in the partial dislocation. We must not, however, rely too much upon this fact alone, as we find in Mr. Adams' article on the Abnormal Condition of the Elbow-joint, in Todd's Cyclopædia of Anatomy, "that oblique fracture of the external condyle is frequently met with in children; a fall on the hand forwards may cause it, the impulse being transmitted along the radius to the capitulum and outer condyle of the humerus. The connexion of the radius with the ulna at this period of life is such, that no resistance is afforded to the forcible ascent of the radius when a sudden fall forwards upon the palm of the hand occurs; and hence, in the young subject, an oblique fracture of the condyle can readily happen."

The symptoms of the above accident, as laid down by Sir A. Cooper, are: "That there is some degree of swelling upon the external condyle, and pain upon pressure; the motions of the elbow-joint, both in extension and flexion, are performed with pain; but the principal diagnostic sign is the crepitus produced by the rotatory motion of the hand and radius. If the portion of the fractured condyle be large it is drawn a little

wards; and a thick cedar pencil having been placed across the elbow, above the cup of the radius, and the ulna being bent to complete flexion, "this had the effect of replacing the head of the radius on its proper level with the inferior surface of the external condyle; and then, by pressing the head of the radius backwards, it was restored to its normal position by the side of the ulna."—Second Series, pp. 99–100.

backwards, and carries the radius with it; but if the portion be small this circumstance does not occur."

Crepitus has often misled the surgeon in dislocation of the elbow-joint, and caused him to mistake it for a fracture, as may be seen by reference to Case 4(*a*). Boyer was well aware of this source of error, and says: "Another phenomenon, which sometimes appears to have been a cause of error in such cases, is a tolerably well-marked crepitus, which may be heard when the parts are moved upon each other. This leads to the belief that a fracture exists, and consequently is treated as such."

Chelius and most modern surgeons are also well aware of this source of error, and the former describes it as being almost always present in dislocations of the elbow-joint.

Fracture of the internal condyle of the humerus has often been mistaken for dislocation of both bones backwards; and partial dislocation of both bones backwards has been mistaken for fracture of the internal condyle. The displacement of the ulna backwards in both accidents, no doubt, leads to error. This may be avoided by recollecting that in fracture of the internal condyle the deformity does not exist when the fore-arm is bent to a right angle, but is immediately reproduced when the fore-arm is extended. The history of the accident may also help our diagnosis, for dislocation is produced by a fall upon the hand, whilst fracture of the internal condyle is caused by a fall upon the elbow. In dislocation of both bones of the fore-arm, be it complete or incomplete, the head of the radius can be felt displaced, and it can neither be fully flexed, extended, nor supinated.

Case IV.—*Dislocation of both Bones backwards; Reduction by means of the Pulleys five Weeks afterwards.*

L. M., a strong, healthy girl, aged 19, was admitted into Jervis-street Hospital on the 5th of February, 1837. She stated that a month previously, in adjusting a set of curtains,

(*a*) *Mal. Chir.*, tom. iv.

she had fallen about eight feet from a ladder. She was stunned at the moment, and upon recovery found her arm powerless. Swelling set in rapidly, and to a very great degree. She stated that a surgeon was instantly sent for, who told her mistress that her arm was fractured.

On examination after admission into hospital, it was discovered to have been a dislocation of both bones backwards. Much swelling and inflammation still being present, leeching and fomentation were ordered.

12th. The swelling and heat of the parts surrounding the joint being much diminished, reduction by means of the pulleys was happily accomplished. The radius resumed its proper position a few minutes after extension was commenced, but a much longer time was required before the reduction of the ulna was accomplished.

Case V.—*Incomplete Dislocation of the Radius, as described by Goyrand.*

Towards the end of last summer I was requested to examine a child about a year and eight months old, who was believed to have received an injury of the arm. He had been already examined, but a decided opinion was not given as to the existence or non-existence of a fracture; and the mother was most anxious to have her mind satisfied on this point. The child lay crying in his mother's arms, with the arm partly extended, and the hand pronated. On inquiring how the accident occurred, the girl who had charge of him said that, a car driving up when they were crossing the street, she caught hold of him by the hand, and so lifted him up, and ran to the opposite side. Having made a careful examination of the limb, I was not able to detect a fracture. If I supinated the hand, it immediately returned to its former position. I could not flex the fore-arm to a right angle, nor could I detect any displacement about the elbow-joint. Having grasped the child's hand with my right hand, and his humerus with the left, I extended his

fore-arm, at the same time supinating the hand. Having held it in this position for about a minute, I suddenly flexed it, which I was then able to do to the fullest degree. The mother told me next day that I was scarcely gone when the child stopped crying, got down from her arms, and went about as if nothing had happened to him; nor was there any appearance of swelling about the joint on the following day.

The history and symptoms of this case so perfectly coincide with the description first given of this accident by M. Goyrand, that I here transcribe his remarks:

"This displacement is never observed but in children of tender age, and most frequently from eighteen months to three years of age. At this period of life children are constantly falling, to prevent which they are caught up by the hand, or again they are lifted up by the hand to carry them over a pool of water; the superior extremity thus placed in pronation supports the weight of the body. From the moment the limb has been subjected to the extension causing the accident, sharp pain is felt in the elbow, the hand is pronated, the fore-arm about one-fourth flexed upon the arm, and resting upon the abdomen; there is no appreciable deformity in the elbow; the limb rests without power of motion. If anything is offered to the child he takes it with the other hand. If you endeavour to move the elbow, the child screams. If you endeavour to supinate the arm you find that you are resisted, and are obliged to desist on account of the cries of the child; and the moment you let go the hand it again resumes the former position."(*a*)

It is evident that in the case I have given above there was some displacement of the radius, as proved by the former position of the hand, the impossibility of supination or of complete flexion or extension of the limb.

M. Goyrand is of opinion that this dislocation of the radius (although but slight) is forwards, and he believes that it may be

(*a*) *Gazette Med.*, tom. v. p. 115.

accounted for by want of strength in the connecting ligaments of the radio-humeral articulation in extreme youth, as also from the weakness of the muscles, which are unable to resist the extending force from its sudden application; that, consequently, the articulating surfaces of the humerus and radius are separated, and at the same moment the muscles contract; the result of which is, that the biceps draws forwards the superior extremity of the radius, and that the other muscles which go from the arm to the fore-arm and hand, draw upwards and forwards the radius, and forcibly keep it in contact with the small head of the humerus, in a position somewhat different from its normal position. Gardner, and after him Rendu, were of opinion that the only displacement was the passing of the bicipital tuberosity of the radius behind the corresponding edge of the ulna. Dissections in young subjects show the space between the radius and ulna to be too great to permit of such being the fact.

In conclusion, I cannot better enforce the necessity of an accurate diagnosis at the time of the injury, than in Boyer's(*a*) words: "If dislocation of the elbow be not quickly reduced, time is given to the soft parts to inflame, and it becomes quickly irreducible. It is rarely after a month or six weeks that reduction can be accomplished, and this is about the time that the inflammation and swelling ordinarily takes to subside. To what consequences, then, are we exposed, if we wait for the swelling and effusion to entirely subside, when any inflammation that may have been present was not to be dreaded beyond six or seven days. Nature can do but little towards the restoration of the powers of the joint. The fore-arm remains partly flexed, and the power of supination and pronation almost entirely lost."

(*a*) Tom. iv. p. 219.

Art. XI.—*Historical Notes concerning certain Illnesses, the Death, and Disinterment of Oliver Cromwell.* By W. White Cooper, F. R. C. S. E.; Senior Surgeon to the North London Eye Infirmary.

There is much interest attached to the closing hours of the existence of those who, by their eminent talents or superior mental endowments, have raised themselves above the standard of ordinary men. Independently of the fact that during sickness the veil is drawn aside from the character, and, with few exceptions, the real nature of the man displayed, our sympathies are awakened by his sufferings as we watch the progress of the disease. We criticise the bearing of the patient, marking with painful interest the failure of remedial measures; we trace, step by step, the sinking of the vital power; and there are few who do not involuntarily heave a sigh as the scene closes, and they read of the flight of the immortal spirit. Men of great genius, when in humble circumstances, are rarely appreciated during life; but no sooner has the grave closed upon them than their superiority is felt and acknowledged, tributes of honour are paid to their memory, and succeeding generations reproach their forefathers with a neglect of talent, which they, perhaps, in their turn, are equally backward in discovering.

History, however, shows us remarkable instances of men who, rising superior to the accidents of birth, have forced themselves forward by the impetus of talent and energy, and have rendered themselves conspicuous, either as the benefactors or the scourges of mankind. National convulsions are peculiarly favourable for the development and manifestation of such characters. Nature seems to have designed these persons for the royal purple. They receive as their due the homage of men who by birth and education possess immeasurably superior advantages, that homage being rendered as the tribute due to a superior mind.

Oliver Cromwell presents a remarkable example of this class. Unknown and unheard-of until he had reached the meridian of life, he raised himself by his courage and mental superiority to the government of these kingdoms. Unacquainted up to the age of forty-three with military tactics, he organized an army, more terrible in war, and more orderly in peace, than Europe had ever seen. He humbled the pride of Spain and Holland, and made Great Britain respected by all nations. He set an example worthy of imitation, of discriminating talent, and affording it opportunities for development. He raised the moral standard of his country from the degradation to which it had fallen since the time of Elizabeth, and left a fame behind him proportioned to his extraordinary fortunes, and to the great qualities which sustained them.

On the 23rd of April, 1616, the immortal poet, Shakspeare, breathed his last; and on that same day commenced, in the little world of a university, the public career of a man destined to play a most conspicuous part in the history of these kingdoms. It appears by the university records, that on the 23rd of April, Oliver Cromwell, being then seventeen years of age, was entered a member of Sydney Sussex College, Cambridge. His father dying soon afterwards, he removed to London, and studied at Lincoln's Inn; but disliking a legal life, and having married, he returned to his paternal demesne in Huntingdonshire. The next ten years were passed in comparative seclusion with persons whose religious tenets were of a stern and sombre description. During this period he was subject to severe hypochondriasis. He frequently wandered by the banks of the Ouse for hours together, in a state of extreme dejection, and uttering groans in agony of spirit. It is also related that on several occasions he sent for Dr. Simcott, a physician at Huntingdon, to come to him with all speed, as he fancied he was dying.

This hypochondriasis has been attributed by his biographers either to the prickings of his conscience for sins in ge-

neral, or to remorse for an abandoned life, and has been used as an argument in favour of his having led such a life. It appears to us that physical causes have not been sufficiently taken into consideration. Hypochondriasis, arising either from derangement of the biliary or digestive organs, or from malaria, is one of the most frequent sources of misery to mankind. The sufferer is harassed by real or imaginary evils, even to the expectation of approaching death. A deep gloom pervades the mind; hope is for the time extinct; trivial indiscretions assume the aspect of crimes of the deepest dye; whilst the mind is so unhinged that it is incapable of the least exertion, and thus the unfortunate individual is denied the consolation of forgetting for a time his griefs in any interesting occupation.

Cromwell was living in a low marshy country when he first suffered from this malady; for, however well drained Huntingdonshire may be at present, it was certainly far otherwise in the seventeenth century. Dr. James Johnson, when treating of hypochondriasis, says: "There are some cases where this periodical or occasional exasperation of the despondency and mental discomfort cannot be traced to any errors in food or drink; as these exasperations will come on when the individual is adhering to the most strict and temperate regimen. It is difficult to account for such occurrences, but it is quite evident that they depend on some *physical* cause, probably atmospheric, in the shape of malaria, acting on a nervous system rendered unnaturally susceptible by the moral causes already described. . . . During the last few years I have been able distinctly to trace, in numerous instances, the disease in question to malaria; that is, to the influence of a damp situation." There can be no question that such localities do exercise a great influence upon the spirits. The unsettled wandering from place to place, the solitary nocturnal walks, the groans uttered by Cromwell,—all point to a morbid clouding of the mind, the phantom of an imaginary evil which haunted his spirit, and from which his

mental eye turned with dismay. The gloomy character of his thoughts and feelings would harmonize with the stern tenets of the Puritans(*a*). A mind thus overcast is ever ready to seek consolation in overstrained dogmas, miscalled religion; to assume, as the mainspring of its actions, inward impulses, which are preferred to the express commands of the holy Scriptures; and to regard the prompting of a heated imagination as communications directly emanating from the Most High.

It may not unreasonably be supposed that the fanaticism which influenced the mind of Cromwell, and imparted a dark hue to many of his actions, was to be traced in the first instance to hypochondriasis, aggravated, if not excited, by long residence in a low fenny district, fed and increased by the watchings, fastings, and nightly vigils, his distempered imagination led him to observe. A remarkable feature in his character was that deep enthusiasm, that perversion of religious fervour, which induced him to commit acts only to be accounted for by fanaticism. The Puritans supposed that their fervent prayers would, if acceptable, receive an answer direct from the Almighty. By fasting and vigils they were wont to lash their enthusiasm to the highest point, and the mental excitement almost approaching to delirium, which was the natural effect of such proceedings, was regarded by them as a supernatural inspiration. This was remarkably exemplified in the circumstances attendant upon Cromwell's decision as to the fate of Charles I. If, while Cromwell was engaged in prayer, he felt a lively conviction in his mind, he thought that this impression proceeded immediately from heaven, and ought to be fol-

(*a*) Notwithstanding the rage of the Puritans against music, Cromwell was a great admirer of the art, and no mean judge of it. John Hingston, a pupil of Orlando Gibbons, was organist to him. Hingston had been retained in the royal service, but, being tempted by the offer of £100 a year, he went over to the party of the Protector, and instructed his daughters in music.

lowed as the very voice of God. If, on the contrary, his devotions remained languid, he concluded that he ought to abstain from the meditated act.

Whilst the sentence of the King was under consideration, Cromwell's cousin, John Cromwell, at that time in the Dutch service, came to England with a message from the Prince of Orange and the Prince of Wales, to endeavour to save the King's life. When introduced to Oliver, he reminded him of the favourable disposition he had formerly entertained towards the King at Hampton Court, and worked greatly on his feelings. Oliver, still uncertain as to the line of conduct he ought to pursue, replied that he had often fasted and prayed to know the will of God with respect to the King, but that God had not yet pointed out the way. When John had withdrawn, Oliver and his friends again sought by prayer the path they ought to follow, and it was then that the Parliamentary General is said to have first felt the conviction that Charles's death alone could save England. From that moment all was fixed; God had spoken, and Oliver's indecision was at an end; it remained now merely to act and accomplish that will however appalling. At 1 o'clock in the morning, a messenger from the General knocked at the door of the tavern where John Cromwell lodged, and informed him that his cousin had at length dismissed all his doubts, and that all the arguments so long put forward by the most decided republicans were now confirmed by the will of the Lord(*a*).

On the 17th March, 1628, Cromwell took his seat in the new Parliament; he rose to speak for the first time on the 11th of February, 1629, and was listened to with attention; for although his voice was sharp and inharmonious, his delivery was warm and animated, his air manly, his look stern, and his eye bright and sparkling(*b*). Upon one occasion a member addressed the House with so much vehemence and effect,

(*a*) The Protector, by Merlé d'Aubigné. London, 1847.
(*b*) Memoir of Sir P. Warwick. London, 1701.

that Lord Digby, to whom he was unknown, leant forwards, and with astonishment inquired of John Hampden his name. Hampden answered with a smile: "That sloven, whom you see before you, hath no ornament in his speech; that sloven, I say, if we should ever come to a breach with the King (which God forbid),—in such a case, I say, that sloven will be the greatest man in England." The person thus alluded to was Oliver Cromwell.

Troublous times increased; the political horizon grew darker, and religious persecution more severe. Government had rendered itself so odious in various ways, that thousands of men, differing in rank, fortune, and object, severed themselves from their native land and emigrated to distant climes. An order of Council (May 1, 1637) forbade these emigrations. At that very time eight vessels, ready to depart, were at anchor in the Thames; on board one of them were Pym, Haselrig, Hampden, and Cromwell. Who can say what the destiny of England would have been, had that ship been permitted to pursue her course?

In June, 1650, the Council of State having reason to believe that the Scottish army would invade England, determined to be beforehand with them, and to carry war into Scotland. Fairfax was then general-in-chief of the parliamentary forces, but, disapproving of the intended war, he resigned his commission. On the 26th of June an Act was passed nominating Oliver Cromwell general and commander-in-chief of the armies of the Commonwealth(*a*). On the 29th he left London for Scotland, and on the 22nd of July crossed the Tweed. The campaign which followed was marked by unusual inclemency of weather, extreme wet alternating with heavy snow. The Scots adopted a plan of harassing the invading forces, successfully followed in recent times by the Russians on the invasion of their country by Napoleon,—that of destroying

(*a*) Whitelocke's Memorials of English Affairs. Fol. London, 1732.

all forage, carrying away all provision, and devastating the country. So completely was the country stripped of resources that, when Cromwell took up his head-quarters at the house of Lord Mordington, near Berwick, neither furniture nor even ordinary cooking utensils were found. In the quaint language of an eye-witness, "there was not so much as a cup or glass. Some of our souldiers(*a*) brought raw meat with them and became excellent cooks: a back (piece) makes a dripping-pan, and a head-piece a porrage-pot".(*b*) Until the end of August the Scotch army carefully avoided any engagement, their general (Leslie) well knowing that disease and famine would break the spirit and subdue the energy of the enemy. Cromwell, finding his army reduced to great straits, left Musselburgh on Saturday, August 31, and was followed by the Scotch. A favourable opportunity for attacking him presented on the following day, but the Covenanters forbade it on the score of breaking the sabbath; meanwhile Cromwell and his troops reached Dunbar. The Scotch were in possession of the passes which command the road between Dunbar and Berwick, and nothing but the folly of the enemy prevented Cromwell being reduced to the greatest extremities. The Covenanters had been wrestling with the Lord (as they termed it) night and day, and their excited imaginations promising them victory, induced them to persuade Leslie to leave his strong position and to descend into the plains. When Cromwell's attention was drawn to their movement, he is said to have

(*a*) Since this article has been in type, four original letters of Cromwell, discovered by Mr. Dawson Turner amongst the papers of Dr. Cox Macro, have appeared in print. A sentiment expressed in one of them is so strikingly characteristic of the writer that I cannot forbear quoting it:

"If," says he, "you chooose godly honest men to bee captaines of horse honest men will followe them. . . . . I had rather have a plaine, russett-coated captaine, *that knowes what hee fights for, and loves what hee knowes,* then that which you call a gentleman, and is nothing else." Of such "russett-coated men" were the armies of the Commonwealth composed.

(*b*) Perfect Passages, July 26, 1650.

watched them for a time through a telescope, and then, closing his glass, to have exclaimed, that "the Lord had delivered them into his hands." It is impossible not to be struck with the resemblance of this scene to one which occurred during the Peninsular war. Wellington and Marmont had been watching each other day after day, each striving to take advantage of any blunder his adversary might commit. On the 22nd of July, 1812, Marmont extended his left beyond support. In the words of the eloquent historian of the Peninsular war: "Marmont's first arrangements had occupied several hours, yet as they gave no positive indication of his designs, Wellington, ceasing to watch him, had retired from the Arapiles. But at 3 o'clock a report reached him that the French were in motion, and pointing towards the Ciudad Rodrigo road; then, starting up, he repaired to the high ground, and observed their movements for some time with a stern contentment, for their left wing was entirely separated from their centre. The fault was flagrant, and he fixed it with the stroke of a thunderbolt."(*a*) The glorious battle of Salamanca was the result of this error on the part of Marmont, and the rout of Dunbar of that on the part of Leslie. Never was victory more complete than in either instance. A French officer described the battle of Salamanca as the beating of 40,000 men in forty minutes. That of Dunbar annihilated the Scotch army, and at once placed Cromwell in possession of Edinburgh and Leith.

The combination of bodily fatigue, harass of mind, and exposure to the weather, during an unusually inclement season, was greater than Cromwell's iron frame could bear; and in February, 1651, he had a sharp febrile attack, which for a time confined him to the house. A letter from Edinburgh(*b*) says: "My Lord General, since his last march, has been sick of the country disease, but, blessed be God, is on the mending hand."

(*a*) History of the War in the Peninsula, by W. F. P. Napier, vol. v. p. 167.

(*b*) Several Proceedings in Parliament, February 13 to 20, 1650.

A somewhat later account(*a*) says that the Lord General Cromwell "is well recovered again;" and adds: "We hope the cold season of the year will be over shortly, which would much chear up the private souldier in this cold, barren, hungry country." On February 25th we are told that, "my Lord Generall hath had an indisposition of body hanging upon him ever since our last march, and still he continues a little crazy." The press of business thrown upon him by the responsibility of his position, would not, however, permit him to take that care of himself which would have been proper, and accordingly he had a relapse. The intelligence on 4th of March is(*b*): "For newes I have this to advertise at present, since my last, that my Lord Generall, since he was sicke, hath been abroade and went to Leith, but came back not well again, so he hath entered into a course of physic, but, God be blessed, pretty chearfull, but loathe at present to venture abroade, for fear of catching cold as yet, untill he hath gotten more strength(*c*).

By a letter from a gentleman that attended the Lord General Cromwell in Scotland, to the Lady Cromwell at Westminster, we find that he made steady progress towards recovery(*d*): "Honourable Madam,—Having this occasion of our extraordinary post, I could not omit this opportunity of giving your ladyship some account how my Lord Generall doth, though I have scarce time to put pen to paper. Truly, Madam, my lord took his rest very well on Tuesday night last, and so (blessed be God) he hath done every night since, and sometimes in the daytime also; so that he is better sensible both in Dr. Goddard's judgement and also in his own, hath a better stomach, and

(*a*) Perfect Passages, February 14 to 21.

(*b*) Several Proceedings in Parliament, March 6 to 13.

(*c*) The papers above quoted bear date 1650, but clearly bear reference to events of 1651, as may be seen by comparing them with papers of March, 1651. In the spring of 1650 Cromwell was in Ireland.

(*d*) Perfect Passages, March 7 to 14.

grows stronger." The information carried on to the 20th is(*a*), "that my Lord Generall having fallen into some indisposition of body, by reason of the hardship indured upon our last march, is now upon the mending hand and pretty well recovered, to the great comfort of the army." On the 28th(*b*) we learn, that "the physitians that are about my Lord Generall Cromwell have been so careful of recovering his health, that they have kept him from being troubled with any publike business, and now he gathers strength apace, and walks about." The next intelligence is, that he is convalescent(*c*): "This day, by special express from Edinburgh, we had as followeth: 'The Lord Generall is now well recovered; he was in the dining-room this day with his officers, and was very chearfull and pleasant, so that there is not any fear (by the blessing of God), but he will be enabled to go into the field when provisions come.'" And on the 10th of April we find that he was recovered from the attack and in active service(*d*): "Our ships are now before Blacknesse, having given the enemy a terrible alarm. * * His Excellency is, blessed be God, at this present in person in the field."

Not only were the Lord General's physicians and attendants in much alarm concerning this illness, but he himself entertained but small hopes of recovery, as is shown by the following letter to Bradshaw, Lord President of the Council(*e*):

"*Edinburgh, 24th March*, 1650(51).

"My Lord,—I do, with all humble thankfulness, acknowledge your high favour and tender of respect to me, expressed in your letter, and the express sent therewith to inquire after one so unworthy as myself. Indeed, my Lord, your service

(*a*) Mercurius Politicus, March 13 to 20.
(*b*) Perfect Passages, March 21 to 28.
(*c*) Perfect Diurnal, March 24 to 31, 1651.
(*d*) Sev Proc. in Parl., April 3 to 10, 1651.
(*e*) Letters and Speeches of Oliver Cromwell, by T. Carlyle, vol. ii. p. 302.

needs not me. I am a poor creature, and have been a dry bone, and am still an unprofitable servant to my master and you. I thought I should have died of this fit of sickness; but the Lord seemeth to dispose otherwise. But truly, my Lord, I desire not to live, unless I obtain mercy from the Lord to approve my heart and life to Him in more faithfullness and thankfullness, and to those I serve in more profitableness and diligence."

Having taken the field again, Cromwell continued actively engaged with the army until May, when he brought his forces back to Edinburgh, and took up his quarters at the noble mansion of Earl Murray, in the Canongate. Soon afterwards he was attacked with an intermittent fever which brought him to the brink of the grave. So severe was his illness that it excited the most serious apprehensions in the Parliamentary forces, and elevated in a proportionate degree the spirits of the Scots. Indeed it was generally believed by their army that he was dead, until one of the soldiers had ocular demonstration of his existence. A Scotch trumpeter, coming from Fife to Edinburgh, very confidently affirmed to the soldiers that their General was dead, although they did very well to conceal it, and laughed to scorn all their assurances to the contrary. Cromwell, hearing of this, ordered the trumpeter to be brought into his presence, as he was then convalescent, and desired him to carry back to his friends the positive intelligence of his being still in the flesh.

It would seem that during his short campaign he suffered from a fit of gravel: "Berwick, May 4.—The Lord General hath been ill of the stone, but, blessed be God, is now again well and chearful. His Excellency is returned with the army to Edinburgh to their old quarters."(*a*)

An illness, which nearly proved fatal, commenced about the 10th of May, 1651. The contemporary accounts are as

(*a*) Sev. Proc. in Parl., May 8 to 15.

follows(*a*): "Being at Edinburgh, in Scotland, it pleased the Lord to exercise him with sore sicknesse, a high and dangerous Feavor, whereby he was brought so low that his physicians and others had little or no hopes of his recovery; for one fit of his distemper having lasted about twelve hours; immediately a second fit returned upon him without any intermission for as long a time, and likely to have continued in that extremity, until thereby he had expired. But behold, this was God's opportunity to show his power, and to magnifie his Word, a portion whereof, by the hand of the Spirit of the Lord, was then given in unto him, not only to feed his faith, and revive his heart, but also to rebuke his disease, which immediately left him, to the astonishment of himself and others, it being little less than a miracle; for his distemper returned no more upon him." A letter from Edinburgh contains some interesting particulars of this illness, which for a time paralysed the parliamentary troops(*b*): "Sir, I bless God that I can give you some more comfortable information concerning my Lord's health, than I did in my last. From Friday night till Monday at 12 of the clock at night, he had five fits of an ague. But Monday at night he had none, but rested and slept well; and this day he is quiet and comfortable, and now and then sleeps. His lips brake out about six at night which is a good sign of recovery. I waited on him on Thursday. If it please God he escape his fit this night we may hope the worst is past for this bout. I suppose the post will be stayed till morning to give an account of this night, but that is not my work. This is the third relapse since his first great sickness which was contracted by a winter's march. My Lord is not sensible that he is grown an old man. But if it please God to restore him now (of which we doubt not), I hope we shall prevail with him to favour himself. This air is not so suitable to his

(*a*) An Account of the Last Hours of the late renowned Oliver, Lord Protector. London, 1659, p. 8.

(*b*) Perfect Diurnal, May 26 to June 2, 1651.

temper as that of England. All thoughts of his marching with the army at their first going out is laid by; and the officers provide accordingly to manage their business without his personal presence."

The intelligence of the illness of the General caused the Parliament so much uneasiness that, on the 27th of May, they sent a message desiring him to retire to some convenient place in England, for the benefit of his health; and, moreover, ordered Dr. Bates and Dr. Wright, who were Cromwell's physicians in London, and highly esteemed by him, to proceed forthwith to Scotland to take charge of him: he was, however, recovering before they arrived. A letter from Edinburgh says(*a*): "We have received intelligence here that the old Lord General Fairfax hath this way sent his coach from London with two doctors, Dr. Wright and another, to visit his Excellency Cromwell. They are expected here to-morrow, but the Lord himself hath (before their coming, blessed be his name) been his physician, and said unto him 'Live.'" A journey from London to Edinburgh in those days was no inconsiderable matter, but the doctors accomplished it in safety, and arrived at their destination on the 30th of May, as appears from the following letter from Edinburgh, dated May 31(*b*): "It is a great gladness to our hearts that the Lord is pleased to be so merciful to us in the renewed health of my Lord Generall. He eats and sleeps well, and walked yesterday very cheerfully in the garden at his own quarters, and gaineth strength apace. Dr. Wright and Dr. Bates came hither yesternight and, as they deserved, were exceeding affectionately entertained by my Lord." Soon after this he was sufficiently recovered to take the air(*c*): "From Scotland we hear that the English army hath taken the field, and that the Lord Generall Cromwell, on Thursday, June 5, rode abroad in his coach,

(*a*) Sev. Proc. in Parl., May 29 to June 5.
(*b*) Mercurius Politicus, June 5 to 12.
(*c*) The Faithful Scout, June 13 to 20.

but by reason of the ill vapors proceeding from the Scottish mist, his Excellency soon returned to Edinburgh again."

Cromwell was deeply sensible of the danger from which he had been mercifully preserved, and seems fully to have appreciated the consideration shown to him by the authorities at home. These feelings he expresses in a letter bearing date June 3, 1651, and addressed to the Lord President of the Council(*a*): "My Lord,—I have received yours of the 27th of May, with an order from the Parliament for my liberty to return into England for change of air, that thereby I might the better recover my health, all which came unto me whilst Dr. Wright and Dr. Bates, whom your Lordship sent down, were with me. I shall not need to recite the extremity of my last sickness. It was so violent that indeed my nature was not able to bear the weight thereof. But the Lord was pleased to deliver me beyond expectation, and to give me cause to say once more, 'He hath plucked me out of the grave.'" On the 9th of June intelligence was received in London that the General was restored to health, and that the physicians had returned to town.

Such was the first distinct attack of the disease which, seven years after, returned upon Cromwell, when his frame was shattered by mental anxiety and the cares of the State, and his heart broken by an accumulation of the heaviest afflictions. The loss of his old and dear friend, the Earl of Warwick, and the death of his beloved daughter immediately after, crushed him to the earth, and completely prevented his rallying from the fever which brought him to the grave.

To carry on the thread of this history our readers may be reminded that Cromwell was elected Lord Protector of the Commonwealth, Friday, 16th of December, 1653. On the 29th of September, 1654, he met with an accident from which it is marvellous how he escaped unscathed. In those days Hyde Park was comparatively in the country; the restless

(*a*) Carlyle, *Op. cit.*

tide of population had not then reached it. On Michaelmas day the Lord Protector, being disposed for relaxation, rode there with Secretary Thurloe, and took his repast *al fresco*. What the adventures were which befell him, we learn from a despatch from the Dutch ambassadors(*a*) to their Government: "His Highness, only accompanied by Secretary Thurloe and some few of his gentlemen and servants, went to take the air in Hyde Park, where he made his dinner, and afterwards had a desire to drive the coach himself, having put only the Secretary into it, being those six horses which the Earl of Oldenburgh had presented unto his Highness, who drove pretty handsomely for some time, but at last, provoking those horses too much with the whip, they grew unruly and run so fast that the postillion could not hold them in. Whereby his Highness was flung out of the coach-box upon the pole, upon which he lay with his body, and afterwards fell to the ground; his foot getting hold in the tackling he was carried away a good while in that posture, during which a pistol went off in his pocket; but at last he got his foot clear and so came to escape, the coach passing away without hurting him. He was presently brought home and let blood, and after some rest taken he is now pretty well again."

Until this period the venerable mother of the Protector was alive. Her affection for her son was extreme, and her anxiety for his safety so great, that she could never go to rest in peace until she had assured herself, by the sight of him, that he was alive and in good health. She died on the 16th of November, 1654, at the patriarchal age of 94; and her last moments are thus described by Thurloe: "A little before her death she gave my Lord her blessing in these words: 'The Lord cause His face to shine upon you and comfort you in all your adversities; and enable you to do great things for the glory of your Most High God, and to be a relief unto

(*a*) A Collection of the State Papers of John Thurloe, Esq., London, 1772, vol. ii. p. 652.

His people. My dear son! I leave my heart with thee! Good night!"—and therewith sank into her long sleep. A solemn and touching farewell!

In September, 1655, it was generally rumoured in Holland and Hamburgh, that the Protector "had beene lately in danger of his life,"(*a*) which report caused some excitement among the royalists. Its origin, doubtless, arose in a severe attack of cholic, which had threatened serious consequences, and rendered complete repose of body and mind indispensable. Nieuport, the Dutch Ambassador, was desirous of an audience on the 17th September; applying to the Secretary of State, he was informed that(*b*), "the Lord Protector found himself a little better than before, but that he daily still continued to take physic; and that the physicians had desired him to abstain as yet, as much as possible, from consultations of state; that accordingly, neither the Council nor he had dared trouble him in the least."

The year 1658 brought with it great cares and troubles to the Protector. The position which he occupied exposed him to manifold perils, secret and open; the wear and tear of state anxieties, with incessant toil of body and mind, told upon him, and he was constantly harassed by plots against his life. He had been subject to repeated attacks of indisposition during the spring, which, though not of themselves particularly dangerous, indicated the extent to which his constitution was undermined. As early as September, 1650, he had written to his wife(*c*): "The Lord hath showed us an exceeding mercy; who can tell how great it is! My weak faith has been marvellously supported; though I assure thee I grow an old man, and feel infirmities of age marvellously stealing upon me."

In addition to the cares we have mentioned, Cromwell was doomed to heavy afflictions; he lost by death his old and valued friend, the Earl of Warwick, and also the heir to that

(*a*) Thurloe, vol. iv., p. 26. (*b*) *Op. cit.* p. 18.
(*c*) Carlyle, vol. ii. p. 224.

house, Mr. Rich, who had married the Protector's youngest daughter; but the heaviest blow was the death of his amiable and favourite daughter, Mrs Claypole. She is described by foes, as well as friends, to have possessed every qualification which could adorn her sex. Whatever faults Cromwell may have possessed, those of coldness of friendship, or want of affection in the domestic relations of life, cannot be charged against him. His letters prove him to have been a devoted husband, an excellent parent, and a warm friend. There are many who, regarding him as an accomplished hypocrite, can see only *cant* in his exhortations; but those who will peruse his letters to his wife and children(*a*) with an unprejudiced mind, will, we think, agree with us, that they bear internal evidence of true devoutness, and are penned in sincerity of heart and singleness of purpose. Mrs. Claypole died of uterine disease, most probably cancer of the womb; and during her long and painful illness her father attended upon her with the most tender solicitude. For fourteen days and nights he never quitted her bedside; and in addition to the affliction her sufferings must have caused him, his feelings were harrowed up by reproaches which she addressed to him during the delirium caused by the intensity of suffering. A short time previously, the Protector had directed the execution, for high treason, of Dr. Hewet, a divine who had united in marriage Mary, his third daughter, to Lord Fauconberg, and in whom Mrs. Claypole felt deeply interested. In vain, however, had intercession for him been made by her. Her father was inexorable, and the sentence of death was permitted to take its course. This, and other acts of his life, are said to have formed the subject of his daughter's bitter reproaches, which were felt most keenly by her suffering parent. When, however, the hopes which were entertained of Mrs. Claypole's recovery proved fallacious, and she sank into that sleep which knows no wak-

(*a*) Carlyle, Letters xcv. cxix. cxxx. clvii. clix.

ing(*a*), then did the intensity of grief bow Cromwell to the earth, inflicting such a shock upon his already enfeebled system as to cause the return of the intermittent fever from which, seven years before, he had suffered in Scotland. Some authorities have supposed that the ague of which he died was contracted at Hampton. There is, however, good reason to believe that it was merely the latent seeds of his former attack, roused into activity by a combination of debilitating causes. It is well known that circumstances comparatively trifling will induce a return of intermittent fever after long intervals, and debility renders the individual especially prone to its incursions. A high authority thus expresses himself(*b*): "When I have told you that debility, any how produced, constitutes a predisposition to intermittent fever, I need scarcely add that all the multiform causes of debility may also be regarded as predisposing causes of this same disease, as they are of so many others. But the strongest predisposing cause of all is actual occurrence of the disease itself. The effect of former intermittents upon the system is such, that the complaint may be reproduced by agencies, which under any other circumstances would be quite inoperative in exciting ague . . .

(*a*) Mrs. Claypole died on the 6th of August, at Hampton Court, from whence she was conveyed by water four days after, with a great many mourning barges, to Westminster, and there laid in the Painted Chamber, where a stately hearse was prepared for her, and about 12 at night she was carried into King Henry the Seventh's chapel, and there interred.—*History of Oliver Cromwell*, by R. D. London, 1692 In 1725, when alterations were making in that chapel, previous to an installation of the Knights of the Bath, the vault of this lady was discovered near the steps of the founder's tomb. Mr. Fidoe, clerk of the works, observing the workmen extremely busy, and in confusion, went to them, when he found that they had forced the silver plate from off the coffin, and were endeavouring to conceal it. Fidoe took it from them, and delivered it to Dr. Pearce, the Dean, who said he would not take anything that had been deposited with the illustrious dead, and ordered it to be carefully replaced.—*Noble's Memoirs of the Cromwell Family*, vol. i. p. 142.

(*b*) Watson's Lectures on the Practice of Physic, vol. i. p. 712.

The disease leaves the body in a condition in which other injurious influences may of themselves be sufficient to renew it. It brings into play a new order of exciting, or rather of re-exciting causes. If a person were never exposed to the malaria, he would never, as I believe, have ague; but having once had ague he may many times have it again, although he should never again be subjected to the direct influence of the malaria."

The Protector had been far from well, and suffering from gout, for some days previous to the death of Mrs. Claypole; and the combination of anxiety, grief, and loss of rest, had altogether deranged his system. Symptoms of intermittent fever did not fully develope themselves until the 17th August, though he suffered much from pains in his back and bowels, and his rest was broken and unrefreshing. The despatches to Henry Cromwell, Lord Lieutenant of Ireland, afford a very interesting narrative of his fatal illness, which is rendered complete by the writings of Dr. Bates, Maidstone, Harvey, and other contemporaries. A curious record has been left by George Fox, the Quaker, of his last interview with the Protector, which took place about the 20th of August, the third day after the appearance of the ague. George Fox and two friends going out of town, had been met by two of Hacker's soldiers, who took them into custody and brought them to the Mews, from whence, however, after some rough jests, they were permitted to depart. "The same day," writes Fox(*a*), "taking boat I went down to Kingston, and from thence to Hampton Court, to speak with the Protector about the sufferings of friends. I met him riding into Hampton Court Park; and before I came to him as he rode at the head of his Life Guard, I saw, and felt a waft of death go forth against him; and when I came to him he looked like a dead man. After I had laid the sufferings of friends before him, and had warned him ac-

(*a*) Fox's Journal, vol. i. pp. 485–6.

cording as I was moved to speak to him, he bad me come to his house, so I returned to Kingston: and the next day went up to Hampton Court to speak further with him, but when I came, Harvey, who was one that waited on him, told me the Doctors were not willing that I should speak with him, so I passed away and never saw him more."

Henry Cromwell, to whom the following communications were addressed, differed greatly from his brother, Richard, afterwards Protector. He was possessed of considerable talents, great energy, indomitable courage, and much tact. It has been supposed, with much reason, that his father intended him for his successor; had he taken the reins of Government, a very different history of England, and of Ireland also, might, perchance, have had to be written! Secretary Thurloe thus reports to him(*a*): "I was necessitated to omit writing by the last post, being obliged to attend my Lady Elizabeth's (Mrs. Claypole's) funeralls, shee being this day se'nnight at night interred at Westminster, whither she was carryed from Hampton Court. Your Lordship is a very sensible judge how great an affliction this was to both their Highnesses, and how sadd a familye she left behind her, which sadnesse was truly very much encreased by the sicknesse of his Highnesse, who at the same tyme lay very ill of the gout and other distempers, contracted by the long sicknesse of my lady Elizabeth which made great impressions upon hym; and since that, whether it were the retiringe of the gout out of his foot into his body, or from some other cause I am not able to say, he hath beene very dangerously sicke, the violence whereof lasted 4 or 5 dayes, but blessed be God he is now reasonable well recovered, and this day he went abroad for an houre, and findes himselfe much refreshed by it, so that the recovery of his Highnesse doth much allay the sorrow for my Lady Elizabeth's death." Notwithstanding this favourable account, symptoms of

(*a*) Thurloe, vol. vii. p. 320.

intermittent fever set in, and the physicians, finding that the ague increased, rather than diminished in severity, determined upon removing him to London. Dr. Bates informs us, that "for a week's time his disease continued without any dangerous symptoms, insomuch that every other day he walked abroad. But one day after dinner his five[!] physicians coming to wait upon him, one of them having felt his pulse said that it intermitted; at which being suddenly startled he looked pale, fell into a cold sweat, almost fainted away and ordered himself to be carried to bed, where being refreshed with cordials he made his Will. Next morning when one of his Physicians came to visit him, he asked the Physician why he looked so sad? and when he answered that so it became any one who had the weighty care of his life and health upon him; 'Ye Physicians,' said he, 'think I shall die.' Then the company being removed, he holding his wife by the hand, said, 'I tell you I shall not die this bout, I'm sure of it.' And observing the Physician to look more attentively upon him at these words, 'Don't think,' said he, 'I am mad; I speak the word of truth upon surer grounds than Galen or your Hippocrates furnish you with; God Almighty himself hath given that answer not to my prayers alone, but also to the prayers of those who entertain a stricter commerce and greater intimacy with him. Go on cheerfully, banishing all sadness from your looks, and deal with me as you would do with a serving man. Ye may have skill in the nature of things, yet nature can do more than all Physicians put together, and God is far above all nature.'"

Dr. Bates, who has given this account, was subsequently physician to Charles II., and the book in which it is related was published during his reign. It is, therefore, just possible, that, seeking favour with the prevailing powers, the worthy Doctor had somewhat drawn upon his imagination in his narrative of the Protector's illness. He is totally silent concerning his own visit to Edinburgh with Dr. Wright in 1651; that fact is altogether kept out of sight. Whether the words narrated were

actually those used by Cromwell or not, we cannot but admire the just rebuke to the physician who came before him with such a sad countenance. In the sick chamber a cheerful countenance is not only welcome but positively beneficial; and he who assumes a grave and melancholy bearing, drives (to use a homely expression) a nail into the coffin of his patient.

Bates further relates that, "as the Physician was coming out of the chamber he accidentally met another of his particular acquaintances, to whom he said, 'I am afraid our patient will be light-headed.' The other replied, 'you are certainly a stranger in this house. Don't you know what was done last night? The chaplains, and all who are dear to God, being dispersed into several parts of the palace have prayed to God for his health, and all have brought this answer,—'he shall recover.'"

It is an interesting fact connected with the last illness of Cromwell, that prejudice prevented the exhibition of Peruvian bark. The cinchona became popular in England about 1655, but unfortunately an alderman of the city of London, Underwood by name, died whilst taking it, shortly before the Protector's illness. It was immediately reported that he had fallen a victim to the new remedy, and consequently the physicians in attendance upon the Protector feared to employ it in his case.

The Protector was removed from Hampton Court to Whitehall on the 24th of August, and on the 30th Thurloe(*a*) thus writes to Henry Cromwell: "I gave you some account by Doctor Worth of his Highnesse's condition as it then was; but least he should delay his journey or miscarry in it, I thought it was necessary to send this expresse, to the end your excellencye may fully understand how it is with his Highnesse; this is the thirteenth day since his ague took him, havinge beene sicke a fortnight before of a generall distemper of body.

(*a*) Thurloe, vol. vii. p. 363.

It continued a good while to be a tertian ague, and the burninge fitts violent. Upon Saturday it fell to a double tertian havinge two fitts in twenty-four hours; one upon the heeles of another, which doe extremely weaken hym and endaunger his life; and truly since Saturday Morning he hath scarce been perfectly out of his fitts. The Doctors are yet hopefull that he may struggle through it, though their hopes are mingled with much feare. August 30th, 9 o'clock at night."

We have three accounts on the following day. The first is from General Fleetwood to the Lord Deputy of Ireland(*a*). He says: "The Lord's hand hath bene very sorely upon us in the continuance of his Highness under a very great distemper, called an ague, but mostly his heat gave us the sadd aprehension of danger he was under: and truly little hopes as to man was, but the Lord is pleased to give some little reviving this evening. After a few slumbering sleeps, his pulse better, his water good all this day till now at night there hath been very great fears what the wombe of tomorrow might have brought forth."

Secretary Thurloe writes in much the same strain, hoping the best but fearing the worst(*b*).

"*To H. Cromwell.*

"I did by Dr. Worth upon friday, and by an Expresse yesterday, certifie your Excellencye of his highnesse condition; since which, things with him remeyne much as they did, if he doth not declyne more and more. Wee are willinge to hope the best, but truly he is in great daunger, and he is soe weake for the present that he is capable of doeing nothinge respectinge to the Publique."

The last letter is in cypher, commenced on Monday and left open till Tuesday to convey the latest intelligence. Be-

(*a*) Thurloe, vol. vii. p. 367. (*b*) Thurloe, vol. vii. p. 366.

fore the postscript was added we may imagine another consultation of the five physicians, and the grave announcement that human means could avail nothing further.

"*Lord Fauconberg to H. Cromwell*(*a*).

"*Monday, Augt.* 30, 1658.

"Tis with unexpressible grief that I now give your Lordshipp the sad account of His Highnesse's condition, which all the Physitians have for some days judged dangerous, and now more than ever.

"*Tuesday, Augt.* 31.—Z. [the Protector] is now beyond all possibility of recovery."

Public and private prayers were offered up all this time for his recovery, and many, seeking in their wishes an answer to their prayers, gladdened themselves and others with assurances of Cromwell's recovery. Still there were many to whom his danger was fully evident; and accordingly Secretary Thurloe(*b*) and another official entered the sick chamber on Monday, to inquire who, in the case of his death, was to be his Highness's successor? The successor was named in a sealed paper, drawn up above a year before at Hampton Court, and said to be lying in a particular place. The paper was sent for, searched for, but never found. On Thursday morning there was another consultation, and the physician who had been in attendance during the night telling how sorely the Protector had been tried by the last fit, it was supposed he could scarcely survive another day. On that evening Cromwell is understood to have formally named Richard as his successor; or (as suggested by Carlyle) it might be only some heavy-laden "yes, yes," spoken out of the thick death slumbers, in answer to Thurloe's question, "Richard?" On the reply to that inquiry hung the destinies of nations.

On this Thursday night, which was to usher in with the

(*a*) Thurloe, vol. vii. p. 365. (*b*) Carlyle, *Op. cit.* vol. iii. p. 456.

dawn the "fortunate day" of the Protector, the anniversary of the great victories of Dunbar and Worcester, Harvey was waiting on his Highness, and has left on record a faithful and most interesting detail of the events which came under his immediate observation(*a*). The Protector, it appears, was very restless most part of the night, speaking often to himself: "Truly God is good; indeed He is; He will not ——." Then his speech failed him, but, as I apprehend, it was, "He will not leave me." This saying, "God is good," he frequently used all along, and would speak it with much cheerfulness and fervour of spirit in the midst of his pains. Again he said: "I would be willing to live to be farther serviceable to God and His people; but my work is done. Yet God will be with His people."

"He was very restless most part of the night, speaking often to himself; and there being something to drink offered him, he was desired to take the same and endeavour to sleep. Unto which he answered: 'It is not my design to drink or sleep; but my design is to make what haste I can to begone.'"

"Afterwards, towards morning, he used divers holy expressions, implying much inward consolation and peace; among the rest he spake some exceeding self-debasing words, annihilating and judging himself; and truly it was observed that a public spirit to God's cause did breathe in him, as in his lifetime, so now to his very last."(*b*)

When the morrow's sun arose the Protector was speechless, and breathed his last about a quarter before 4 in the afternoon of Friday, September 3, 1658; a day memorable in history.

(*a*) A Collection of Several Passages concerning his late Highness Oliver Cromwell, in the Time of his Sickness; wherein is related many Expressions upon his Death Bed, together with his Prayer within Two or Three Days before his death. Written by one who was then Groom to his Bed Chamber. London, 9th June, 1659.

(*b*) Elenchi Motuum Nuperorum in Anglia. London, 1661, part ii. p. 417.

It is a remarkable fact that the spirits of two of the mightiest men on record departed amidst a war of elements such as has been but seldom known. A tremendous storm visited England, France, and the Netherlands, on the 30th of August, 1658, and continued for some days to rage with intense fury. Large trees were torn up by the roots in St. James's Park, houses were unroofed,—awful wrecks occurred at sea,—and people were unable to move abroad from the violence of the tempest. Amidst the turmoil of the elements the spirit of the Protector quitted its earthly tenement:

> "Heaven his great soul doth claim,
> In storms as loud as his immortal fame.
> His dying groans,—his last breath shakes our isle,
> And trees, uncut, fall for his funeral pile.
> . . . . . .
> Nature herself took notice of his death,
> And, sighing, swelled the sea with such a breath,
> That to remotest shores her billows rolled
> The approaching fate of their great ruler told."—*Waller.*

In like manner a hurricane devastated the island of St. Helena, whilst the death-sweat hung upon the brow of Napoleon; and the roar of the winds doubtless suggested to his wandering mind visions of battles, for to such scenes did his dying words indicate that his thoughts were referred. Thus the resemblance, which in many points existed between the careers of these remarkable men, was completed by the coincidence of the circumstances attending upon their deaths. Each, the hero of many battles, died in his bed, and the last moments of both were disturbed by the uproar of a frightful tempest.

The following account of the autopsy of the Protector is recorded by Dr. Bates: "Dissecto cadavere, in *animalibus* partibus vasa cerebri justo pleniora videbantur; in *vitalibus* pulmones aliquantisper inflammati; sed in *naturalibus* fons mali comparuit: Liene, licet ad aspectum sano, intùs tamen tabo instar amurcæ referto. Corpus etsi exenteratum aromate repletum, ceratisque sextuplicibus involutum, loculo primùm

plumbeo, dein ligneo fortique includeretur, obstacula tamen universa, perrumpente fermento, totas perflavit ædes adeò tetrâ mephiti, ut ante solennes exequias terræ mandari necessarium fuerit."(*a*)

Various rumours were circulated as to the cause of the Protector's death; some said he was poisoned; others, and amongst them the illustrious Pascal, attributed his death to a calculus impacted in the urethra. "Cromwell," said he, "would have laid waste all Christendom, the royal family would have been for ever ruined, and his own for ever on the ascendant, but for a little grain of sand which stuck in his urethra. Rome herself would have trembled under him but for this little morsel of gravel, for it was nothing else, stopping in that place."(*b*)

It is an interesting fact that most of the sovereigns of Europe went into mourning on the intelligence of the death of the Protector; even Louis XIV. showed this outward mark of respect to the memory of the hero of the Commonwealth.

The premature interment of the body rendered it necessary to prepare a figure of wax for the ceremonies of lying in state and the public funeral. Accordingly a waxen effigy was clothed in a suit of uncut velvet, richly laced with gold and trimmed with ermine. On the head was placed a crown, and

(*a*) "His body being opened, in the animal parts the vessels of the brain seemed to be overcharged. In the vitals the lungs a little inflamed; but in the naturals the source of distemper appeared, the spleen, though sound to the eye, being within filled with matter resembling the lees of oil. Though his bowels were taken out and his body filled with spices, and wrapped in a six-fold cerecloth, and put first in a leaden coffin, and then into a strong wooden one, yet the corruption burst through all, and, the foul smell pervading the whole house, *it was necessary to inter the body before the solemnities of the funeral.*"

(*b*) "Cromwel allait ravager toute la Chrétienté: la famille royale était perdue, et la sienne á jamais puissante, sans un petit grain de sable qui se mit dans son urètre. Rome même allait trembler sous lui; meme ce petit gravier, qui n'etait rien ailleurs, mis en cet endroit, le voilà mort, sa famille abaissee, et le roi rétabli."—*Pensées de Pascal*, Part i. art. vi. pen. 7.

in the hands a sceptre and a globe; by the side was a suit of armour. This lay in state at Somerset House, in a room hung with black velvet, until the 23rd of November, when the effigy was placed in a stately open chariot covered with black velvet and drawn by six horses. Thus it was conveyed with great pomp to Westminster Abbey, where, on its arrival at the west gate, the figure was carried by ten gentlemen to the east end of the Abbey, and there placed on a sumptuous mausoleum erected for its reception. The expenses of the funeral amounted to £60,000, and fell upon Richard Cromwell, who was subsequently reduced to great straits, principally in consequence of the expense incurred on this occasion.

The restoration of Charles II. took place in May, 1660. Soon after the extravagant rejoicings and dissipations which followed that event(*a*), the Government proceeded to wreak its vengeance upon the inanimate remains of the most important supporters of the protectorial dynasty. But revenge did not stop there; one hundred corpses were exhumed, including the aged mother of Cromwell, his beloved daughter, Bridget (wife of Ireton),—and, with shame be it spoken, the renowned Admiral Blake, the Nelson of his day. Their bodies were exposed to every species of insult, and finally thrown into a pit beneath the gallows at Tyburn.

The question of the disinterment of Cromwell was brought before the House of Commons on Tuesday, December 4, 1660. It was referred to the Lords, who made a slight alteration in the resolution, which was finally confirmed by the Commons on the 8th of December; and stands thus on the Commons' Journal:

"Resolved, by the Lords and Commons assembled in Parliament, that the Carcases of Oliver Cromwell, Henry Ireton,

(*a*) Charles, it is said, showed his gratitude to heaven for his restoration by passing the first night after his triumphant entrance into London, on the 29th May, 1660, with Mrs. Palmer, afterwards Lady Castlemaine, at the house of Sir Samuel Morland, at Lambeth.—*Personal History of Charles* II. p. 434.

John Bradshaw, and Thomas Pride, whether buried in Westminster Abbey or elsewhere, be with all expedition taken up and drawn upon a hurdle to Tyburne, and there hanged up in their coffins for some time; and after that buried under the said gallows; and that James Norfolke, Esq., Sergeant-at-Arms attending the House of Commons, do take care that this order be put in effectual execution by the Common Executioner for the County of Middlesex, and all such others to whom it shall respectively appertain, who are required in their several places to conform to and observe this order with effect: and the Dean of Westminster(*a*) is desired to give directions to his officers of the Abbey to be assistant in the execution of this order."

In compliance with the order, the bodies of Cromwell(?) and Ireton were taken up out of their graves on the 26th of January, 1661, and the body of Bradshaw(*b*) on the following morning. The coffins, being placed in carts, were carried to the Red Lion, Holborn, and on the 30th of January the last insults were heaped upon them. "To-day (January 30) they were drawn upon sledges to Tyburne. When these three carcasses were at Tyburne they *were pulled out of their coffins*, and hanged at the several angles of that triple tree, where they hung till the sun was set, after which they were taken down, their heads cut off,

(*a*) At the Restoration, Dr. John Earle, or Earles, was made Dean of Westminster. He had been chaplain and tutor to the King when Prince of Wales, and had shared in his banishment. He was subsequently Bishop of Worcester, and died at Oxford, 1665.

The following quaint story is related in Somers's Tracts. A cavalier who witnessed the exhibition of Cromwell's body upon the gallows said to a roundhead acquaintance: "Methinks, friend, thy old master stinks damnably." "True," answered the republican, "but you would have smelled worse had you been as near him when living as you are now." The *effects* of fear are proverbial.

(*b*) It has been stated with much confidence that Bradshaw escaped to America, and there died: which of the accounts is true I am unable to determine.

and their loathsome trunks thrown into a deep hole under the gallows."(*a*)

The heads were set upon poles on the top of Westminster Hall, Bradshaw's being placed in the middle, immediately over that part of the Hall where he had sat as President at the trial of Charles I.; the other heads were placed on either side of his.

A report currently prevailed that it was not the body of Cromwell which was submitted to the indignities above described. It will be interesting to inquire how far there were grounds for this supposition.

Dr. Bates, in the account of the *post mortem*, distinctly states that in consequence of the rapid decomposition it was necessary to inter the body before the public funeral; but he does not state the place of the interment, nor have we succeeded, after a laborious search, in meeting with any authentic account of this private funeral.

Oldmixon assures us that he was informed by a gentleman who attended the Protector in his last illness, that it was resolved "to wrap it [the corpse] in lead, to put it aboard a barge, and to sink it in the deepest part of the Thames; which was done on the night following, two of his near relations, with some trusty soldiers undertaking to do it."(*b*)

There can be little doubt that Oldmixon was imposed on; but another, and more circumstantial account has received extensive credit. It is as follows: "The said regicide Barkstead being Lieutenant of the Tower of London, and a great confidant of the usurper, did among other such confidants, in the time of the usurper's sickness, desire to know where he would be buried? To which he answered: 'Where he had obtained the greatest victory and glory, and as nigh the spot as could be guessed where the heat of the action was,' namely, in the

(*a*) Mercurius Publicus, January 24 to 31, 1661.

(*b*) Oldmixon's History of the Stuarts, vol. i. p. 426.

field at Naseby in the county of Northampton. Which accordingly was thus performed. At midnight soon after his death, being first embalmed and wrapped in a leaden coffin, he was in a hearse conveyed to the said field (the said Mr. Barkstead, by order of his father, attending close to the hearse); and being come to the field, there found about the midst of it a grave dug about nine feet deep, with the green sod carefully laid on one side and the mould on the other; in which the coffin being soon put the grave was instantly filled up, and the green sod laid exactly flat upon it, care being taken that the surplus mould was clean taken away. Soon after like care was taken that the said field was entirely ploughed up and sown, three or four years successively, with wheat."(*a*)

Whether the above statement was founded in fact it is now impossible to determine. On one hand it is not incompatible with the account given by Bates; nor, on the other, is it supported by the evidence of any other person besides Barkstead. The supposition that such a romantic funeral was performed is not necessary; there is no doubt that the body was buried previous to the public obsequies, but there certainly is no proof, so far as we have been able to discover, that it was interred in Westminster Abbey. It was generally rumoured and extensively believed, both before and after the Restoration, that another corpse had been substituted for that of Cromwell in the coffin supposed to contain it, which was subsequently disinterred; and that the real corpse had been buried elsewhere. When we consider that decomposition had proceeded with such rapidity after death as to render premature interment necessary, it is highly improbable that after the lapse of two years and four months, the corpse of Cromwell should have been in such a state of preservation as to admit of its being suspended from the gallows in the manner described by the journals of the day. Orfila, who has bestowed much attention on the subject of

(*a*) Harleian Miscellany, vol. ii. p. 286.

decomposition, found that in a majority of cases, bodies were reduced to skeletons at the end of fourteen, fifteen, or at the utmost eighteen months, even when buried in coffins and wrapped in clothes, and this when no unusual signs of putrefaction had appeared before interment. The greater the decomposition before interment the more speedy would be the destruction of the soft parts and dissolution of the ligaments. A body buried in a gravelly soil, such as that upon which Westminster Abbey stands, would, under ordinary circumstances, undergo changes more slowly than if placed in a damp and rich soil; but it may be doubted whether such a locality would much retard the dissolution of bodies in which the putrefactive process had set in immediately after death and made great progress. From inquiries of the Clerk of the Works at the Abbey, we find it uncertain how long bodies lie there without becoming skeletons, as only one has been seen for many years, and that had been buried about sixteen years: it was a perfect skeleton.

Supposing that another corpse had been substituted for that of Cromwell, the imposition would not have been readily detected. On a trial that took place at Edinburgh some years ago, Dr. Barclay, the celebrated anatomist, stated that the longest time he ever knew, during which the features remained recognisable, was a fortnight. We may well suppose that those, whose disgusting duty it was to fulfil the orders of Parliament upon the bodies of the regicides, would be eager to complete their unpleasant task as quickly as possible; they would not be likely to trouble themselves about the identity of the bodies, and the mutilations they performed would render that identification subsequently more difficult, if not impossible.

All things then considered, we are still at a loss to know what really became of the corpse of Cromwell, though we may fairly conclude it was not his body which was subjected to the indignities intended for it by Charles II. and his Parliament.

Art. XII.—*On the Frequency, Diagnosis, and Treatment of Retroflexion or Retroversion of the Unimpregnated Uterus.* By J. Y. Simpson, M.D., Professor of Midwifery in the University of Edinburgh. &c. &c.

PRELIMINARY REMARKS, AND DEFINITION.

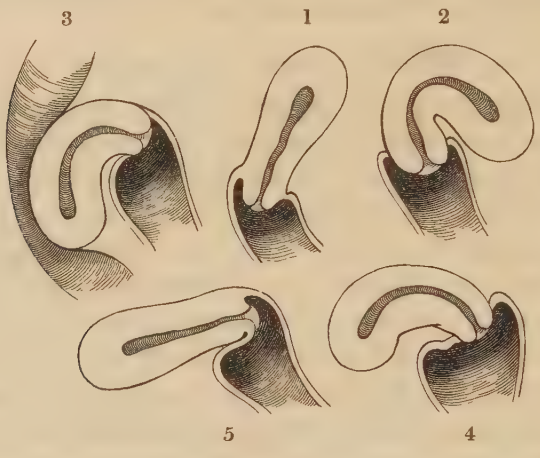
Diseases are sometimes regarded as rare, merely in consequence of a deficiency on our part of a proper and easy means of detecting them during life, or from our overlooking their existence in the dead body. Not many years ago, for instance, emphysema of the lung and granular degeneration of the kidney were supposed to be affections that were very seldom met with in practice. After, however, Laennec and Bright pointed out simple and ready modes of diagnosticating these diseases, they were speedily found to be morbid affections that were extremely common, instead of extremely rare, in their occurrence; and every physician at the present day is now ready to acknowledge their great frequency.

With some of the displacements of the unimpregnated uterus practitioners have long been familiar. In particular, the displacements of the organ downwards, in the form of prolapsus and procidentia, are recognised and acknowledged by all, and elaborately described in every work on female diseases. But displacements of the unimpregnated uterus, in the form of versions or flexions, either of the whole or of the upper part of the uterus, posteriorly, anteriorly, or laterally, have hitherto been looked upon as rare; and this, far more however, from our past want of power of diagnosticating them, than from their own infrequency.

In the present communication, it is my object to describe, briefly, some new and simple means that I have practised for the last four or five years for detecting and treating these displacements.

Let me premise that, in the normal and healthy state, the

long axis of the uterus is situated in a line parallel with the line of the axis of the brim of the pelvis, or in the relative direction represented in the accompanying diagram (Fig. 1) (*a*). But the fundus of the uterus, instead of looking upwards, may



be turned downwards and forwards, or downwards and backwards. In Fig. 2 it is represented as directed downwards and forwards, constituting *antiversion*. In Figs. 3, 4, and 5, it is directed downwards and backwards, constituting *retroversion*. These three figures of retroversion (Figs. 3, 4, and 5) represent different forms or degrees of this displacement. The diagram, Fig. 3, represents an aggravated degree of retroversion, taken from a drawing of a case of this displacement by Frank. The mode in which the rectum is impressed by the retroverted uterus is shown in the diagram. He found this instance of displacement of it in the body of a patient who had died of chest disease, but he does not give her previous history(*b*).

Some authors have attempted to draw a specific line of

(*a*) These diagrams are intended to represent verticle or antero-posterior sections of the uterus, and upper part of the vagina. In fig. 1 the uterus is supposed to be placed in its normal position, and the other four figures represent different deviations of the organ from this position.

(*b*) *Opuscula Posthuma*, p. 78.

distinction between the forms of posterior displacement of the uterus pourtrayed in Figs. 4 and 5, and have described the form given in Fig. 4 as *retroflexion*, and that given in Fig. 5 as *retroversion*. In other words, by retroversion, properly so called, they would understand a displacement backwards of the entire organ (Fig. 5), the flexion taking place in the upper part of the vagina, and the uterus itself not being necessarily changed in form. On the other hand, retroflexion (Fig. 4) is a term proposed to designate the displacement backwards of the fundus only, along with more or less of the body of the uterus; the lower part of the cervix uteri retaining, in some degree, its natural position, and the flexion taking place in the substance of the body, or upper part of the cervix of the organ. But in reality, in the living subject, we meet with all possible intermediate shades and degrees of these posterior displacements; and I believe it to be an incorrect and unnecessary refinement to draw such theoretical nosological distinctions between them. Practically and pathologically, there is no true difference between these modifications or degrees of this morbid position of the uterus; and I shall in my subsequent remarks include them, and all other varieties of posterior displacement, under the generic term of Retroversion. Farther, in order to avoid repetition, I shall in the present communication treat only of retroversion of the uterus. It will be found that the same principles of diagnosis and treatment apply, *mutatis mutandis*, to the almost equally common displacement of the uterus which I have defined above as Antiversion.

ALLEGED RARITY OF RETROVERSION OF THE UNIMPREGNATED UTERUS.

In all our English systematic books on midwifery and female diseases, down to the very latest works, retroversion of the *unimpregnated* uterus is described as an exceedingly rare disease.

In his work on the Diseases peculiar to Women (1846),

Dr. Ashwell tells us that he has "been long in the habit of observing uterine organic disease;" but he states "the published cases of retroversion are nearly silent on any other cause than pregnancy;" and he speaks of this as the result also of his own observations(*a*).

Dr. Burns (1844) says: "Mr. Pearson relates a case where the uterus was retroverted in consequence of being scirrhous. Dr. Marcet gives an instance where the uterus was retroverted without pregnancy, producing constipation and vomiting. Dr. Alken (of Bergheim), relates a case where a woman, after suffering from difficulty of passing the urine and stools, had in fourteen days complete retention of both. The bladder reached to the umbilicus; the extremities were cold, the pulse small, vomiting, &c.: the urine was drawn off. After bleeding and the warm bath, force was employed in opposite directions, both from the rectum and vagina, and in an hour the uterus was replaced. It was, however, displaced again next day, but was reduced, and the retroversion did not return. The uterus was unimpregnated." Dr. Burns himself quotes these cases in illustration of his own opinion, that retroversion, besides occurring during pregnancy, "*may* also be produced when the womb is *enlarged* to a certain degree by disease."(*b*)

Writing in 1844, Dr. Churchill observes: "I have known retroversion to happen the first day of a menstrual period, when the weight of the uterus was increased by afflux of blood. Mr. Pearson and Dr. Blundell met with cases of retroversion caused by scirrhus. Callisen and Blundell mention cases where this accident followed delivery, *but such must be exceedingly rare.*"(*c*)

The experience of the few last years has amply convinced me that these opinions regarding the supposed rarity of retro-

(*a*) Practical Treatise on the Diseases peculiar to Women, p. 598.

(*b*) Burns's Principles of Midwifery, p. 288.

(*c*) On the Principal Diseases of Females, p. 267.

version of the unimpregnated uterus are entirely wrong. Since discovering an easy method of detecting its existence, I have found it one of the most common and frequent displacements and affections of the unimpregnated uterus(*a*). My observations, in this respect, have been fully confirmed by several of my professional brethren in Edinburgh. Three or four years ago I pointed out its frequency, mode of diagnosis, and treatment, to my friends, Drs. Rigby and Protheroe Smith, of London; and I have much pleasure in adding, that their extensive opportunities at the London Hospital for Uterine Diseases have enabled them and the pupils of that useful institution to confirm amply the justness of my previous inquiries, with regard to the great frequency of retroversion, and the advantages of my proposed methods of detecting and treating it.

SYMPTOMS AND DIAGNOSIS OF RETROVERSION.

General remarks.—The morbid conditions of the uterus are recognized in practice by two classes of symptoms, viz., the *functional and physical.* The evidence derived from these two different classes is different in its nature and value.

All accoucheurs will, I believe, readily admit that the two following observations hold good with regard to the symptoms and diagnosis of utero-gestation, viz.:—1, That the state of the uterus in pregnancy (one and identical as it is) is liable to be accompanied, in different women, or in the same woman in different pregnancies, with very different local, sympathetic, and general effects or functional symptoms; and, 2, that the usual concourse and succession of functional phenomena, to which pregnancy generally gives rise, may be induced by other states and irritations of the organ than utero-gestation.

The same two important inferences are true in regard to

(*a*) In April, 1843, I stated these results in a communication to the Medico-Chirurgical Society of Edinburgh; showed the frequency of retroversion of the unimpregnated uterus, and its means of detection and cure. See Monthly Journal of Medical Science for 1843, p. 660.

the various individual morbid affections of the uterus. The marked uncertainty which exists respecting the local and constitutional effects produced by the condition of the organ in *pregnancy*, holds equally good regarding the effects produced by it in its different states of actual *disease*. In uterine disease, as in pregnancy, the same specific affection of the organ excites sometimes very different phenomena in different cases; and the same specific phenomena frequently result from affections of the organ that are entirely at variance with each other in their pathological character, in their course, and in the treatment required.

In deciding upon the existence or non-existence of pregnancy, especially in any case of importance or doubt, no medical man, who valued his own professional character, would deem himself justified in offering a final and decisive opinion from the study of the mere functional symptoms only; nor would he venture to form a definite judgment, until he had made a sufficiently accurate local or *physical* examination of the state of the uterus itself. In deciding, in the same way, upon the pathological nature, and consequently upon the line of treatment which any marked uterine disease may require, we believe exactly the same caution to be necessary, and the same local or physical examination to be demanded, where there exists any doubt, and where the examination is not otherwise counter-indicated. It is, assuredly, only by doing so that we can hope, with any certainty, to decide upon the *specific* nature of the uterine disease that may be present. We may make the general diagnosis of the existence of uterine disease by the consideration of the *functional* derangements to which such diseases give rise. We can only make the differential diagnosis of what the specific disease of the uterus really is, by aiding this by the physical examination of the structural condition of the organ itself. The study of the rational or functional symptoms may show that the organ is affected, without showing us how it is affected. They point out

the fact of the uterus being the seat of some diseased state or action, without pointing out what is the specific nature of that diseased state or action. To gain this last most important information, we must have recourse to the study of the physical signs or symptoms of uterine disease, in addition to the functional. In other words, we must attempt to ascertain the actual physical or structural condition of the uterus by the tactile and visual examination of the affected organ itself. We must endeavour to decipher and read its morbid anatomy on the living body, by the careful employment of the senses of touch and sight. Hence, then, I attach far less importance to the functional symptoms of retroversion which I have first to enumerate, than to the physical signs, which I shall afterwards consider.

FUNCTIONAL SYMPTOMS OR DERANGEMENTS.

In some cases of retroversion of the unimpregnated uterus (more especially when the displacement is chronic and the pelvis large), as in some other forms of serious uterine disease and of pregnancy, few or no marked functional or sympathetic symptoms, either local or general, are present; while in other instances the attendant functional derangements and irritations are excessively severe and distressing. And in this, as in other uterine affections, between these two extremes we may meet with every shade of difference.

In retroversion, as in other morbid conditions and diseases of the unimpregnated uterus, the accompanying sympathetic derangements or symptoms are, when they are well and highly marked, more or less perfect imitations of the secondary phenomena of pregnancy. Dyspeptic and hysterical symptoms are sometimes present, with local neuralgic pains in the mammæ; in some portions of the vertebral column; or, what is still more frequent, in the parietes of the abdomen or chest, and more especially in a limited spot beneath the left mamma. The displaced position of the uterus often gives rise to mechanical irritations and symptoms of the same kind as if the organ were

actually morbidly enlarged. Constipation and impeded defæcation are frequent results, partly from the fundus of the displaced uterus physically compressing the caliber of the rectum, and partly from its producing a functional inability to expel the feculent contents of the bowel through the lowest part of the canal. Occasionally the bowel is irritated, and there are discharged from it, from time to time, quantities of mucous or fibrinous-like effusions. The bladder frequently suffers from dysuria or retention; and, much more rarely, I have seen a degree of incontinence, especially where the urine has become phosphatic, from the want of power in some cases of completely emptying the bladder. Symptoms of weight, tension, and bearing down in the regions of the uterus and rectum, with dragging at the loins and in the regions of the uterine ligaments, are very common. Pains often stretch down one or both of the lower extremities. Occasionally there is an inability to bear carriage exercise, and walking and standing speedily produce fatigue. In a few rare cases I have known the patients to find themselves forced to remain almost constantly in the horizontal position, from the intense and overpowering feeling of pressure and malaise which the erect posture always brought on, and the power of standing and progression restored by the spontaneous or artificial reposition of the uterus. In general, all the symptoms, local and constitutional, which I have alluded to, are aggravated more or less by exercise in the erect position; and they are more particularly liable to be increased in their intensity when the uterus becomes periodically congested and heavier, at the recurrence of each menstrual period.

In some cases of retroversion the menstrual function is not morbidly altered. In other cases, however, I have seen the catamenial discharge affected, but affected most oppositely and variously,—occasionally in the way of amenorrhœa, sometimes of dysmenorrhœa, and not unfrequently of menorrhagia, particularly after miscarriage.

The mucous secretion of the uterus is not altered by retroversion, unless congestion or inflammation supervene; it

may then change into leucorrhœa. Occasionally there is a sudden temporary increase of discharge, once or oftener during the intervals between the catamenial periods, as if it had collected in the cavity of the retroverted organ, and escaped, or become expelled, only from time to time.

When a patient with a retroverted uterus becomes pregnant, abortion is apt to take place. But I have seen various instances in which the uterus became spontaneously rectified in position as it became larger, and utero-gestation went on to the full time. Usually the existence of retroversion interferes with the function of conception. Often it is a cause of sterility, as shown by impregnation taking place after the displacement is rectified. In women who have borne children at distances of several years between each, I have several times found the uterus permanently retroverted in the unimpregnated state.

The functional symptoms that I have enumerated may make us suspect the existence of retroversion of the uterus. But retroversion may be present without most, or almost any of them; and they may be present with other diseases besides retroversion. Hence the necessity here, as elsewhere,—in this, as in other uterine affections,—of having recourse to the physical examination of the uterus, in order to decide and determine its actual morbid state.

PHYSICAL SIGNS OF RETROVERSION.

The usual physical means of diagnosis of uterine disease are reducible to the observation of phenomena by the senses of sight and touch.(*a*)

(*a*) In a few cases the sense of hearing is also had recourse to. I have repeatedly heard with the stethoscope a sound like the placental souffle in large fibrous tumours of the uterus. The uterine walls around these tumours are sometimes hypertrophied and thickened exactly like the walls of the uterus in pregnancy, and their vascular structure undergoes a similar increase and mutation. Hence, probably, the origin of the sound in question. When present, I believe it to serve, among others, as a diagnostic mark between fibrous tumours of the uterus nd ovarian tumours.

Speculum.—The employment of sight, by means of the speculum, assists us in no respect in the diagnosis of retroversion.

Tactile Examination.—On an accurate vaginal examination we feel an apparent projection of a solid tumour between the uterus and rectum, when applying our finger, or fingers, behind the cervix uteri to the *posterior* part of the upper reflexion, or roof of the vagina. (At *a*, Plate I. fig. 1.) The same firm mass is felt through the anterior wall of the bowel in making an anal examination. The tumour or mass feels smooth and roundish on its surface; is often sensitive on pressure, more especially if the retroversion is recent, or when the posterior wall is (as often happens) congested and engorged; is generally capable of being moved more or less easily by the finger; and varies in size according to the degree of displacement, and the morbid or healthy state of the uterine walls.

The os and cervix uteri may be displaced forwards, or they may maintain their usual position. The whole body of the uterus is often prolapsed and lower than its natural situation; but occasionally it is quite normal in these respects.

How are we to determine that the solid tumour lying upon the back part of the roof of the vagina, and between the rectum and uterus, is the displaced fundus and body of the uterus?

If the patient be unusually thin and emaciated, and we examine simultaneously with one or two fingers of the right hand placed in the vagina, and those of the left hand placed above the pubis, we can almost feel the uterus between the two hands, and ascertain the whole position and relations of the organ; but this, however, can very rarely be accomplished.

Generally, we have by tactile examination no other means of knowing the probability of the apparent tumour being formed by the displaced fundus and body of the uterus, than by tracing along with the finger, between the tumour and cervix uteri, a direct *continuity* of structure, and this may be done either *per vaginam* or *per rectum*. But this physical sign is in

itself apt to lead into error, if alone depended on. If the uterus is retroflected more than retroverted, the continuity cannot be traced at the point or angle of flexion; while, on the other hand, a fibrous or other tumour attached to the back wall of the uterus sometimes may be distinctly traced to be *in continuity* with the uterine structure, and moves with all motions imparted to the cervix. Nor is the position of the os uteri any more certain guide, for sometimes it is not displaced when the fundus is so; and it may be thrown forwards by a tumour, when the fundus retains its normal position.

Other and additional means, therefore, of diagnosis become necessary. M. Pereyra, of Bordeaux, suggested, a few years ago, to attempt to obtain a more correct physical diagnosis for retroversion, by conducting the examination by the rectum or bladder. "The difficulty" (he observes) "of distinguishing diseased growths from retroversion of the uterus is greater than might at first be supposed; the only way of attaining a correct diagnosis is to ascertain if the uterus be or not in its normal situation. Two methods are proposed for this end; either the forefinger is introduced into the rectum, or a male catheter into the bladder, by the extremity of which instrument an exploratory process is conducted. The latter mode, treated of by Malgaigne(*a*), requires, of course, some tact, but to the experienced surgeon it will give the more certain indication."(*b*)

The determination of the case by an examination *per rectum* is impossible; and I have elsewhere shown that Malgaigne's method of diagnosis is attended with difficulties and uncertainties that render it quite useless in practice(*c*).

A far more simple and certain method is to determine the precise situation of the fundus and body of the uterus, not through either the intestinal canal behind, or the urinary canal in front, but through the intermediate genital canal itself. The

(*a*) *These du Concours*, 1833.

(*b*) American Journal of Medical Sciences, April, 1843, p. 483.

(*c*) See Monthly Journal of Medical Science for 1844, p. 214.

proper canal of the uterus is, of course, too narrow to allow us to introduce our finger into it; but by passing into it a slender metallic finger (if we so speak), we can easily by it ascertain, amongst other matters, any change in the *direction* of its cavity, and consequently in the direction of the body and fundus of the uterus itself. The employment of the uterine bougie readily enables us to do this.

Examination by the Uterine Sound or Bougie.—The form, &c., of the uterine bougie is represented in Plate I., and consequently requires little or no description. Some years ago I gave a full account of the instrument, and the mode of using it(*a*). It has the configuration of a slender male cathether; tapering in form; knobbed at the extremity; divided into sections, so as to measure, when required, the length of the uterine cavity; and provided with a handle, smooth on its posterior surface and roughened on its anterior (that surface represented in the Plate), in order to make the operator constantly aware of the position and direction of the point and concavity of the instrument, when it is passed into and hid in the uterine cavity(*b*).

(*a*) See Monthly Journal of Medical Science for 1843, p. 703, &c.

(*b*) The normal length of the cavity of the healthy uterus is two and a half inches, and at that point the bougie is marked, as seen in the figure, by a single elevation or knob, which can be readily felt when the instrument is under use, and at once advertises the practitioner that it is introduced the full length of the uterus. When the uterus is hypertrophied,—when enlarged with fibrous tumours, &c., &c.,—the cavity is elongated, and the degree of its elongation can be easily measured by the bougie. There are two elevations upon it, at four and a half inches from the point, in order to enable the physician to take his measurements easily without withdrawing it. Elsewhere than at two and a half and four and a half inches from the point there are depressions or grooves at inch distances for the same purpose. In cases in which the uterine cavity is diminished in length by inversion, &c., the bougie equally enables us to ascertain that point. The whole length of the stem is nine inches. It is represented in the plate as bent in the angled form in which I generally use it; but, being made of silver, its bend can be readily changed, increased, or diminished, to suit different cases and indications of use.

This instrument can be easily and readily passed into the uterine cavity, so as to enable us to measure its depth; to examine, more distinctly than we have otherwise the power of doing, its fundus, body, and cervix; to ascertain the presence of strictures in the canal; diseased states of the cavity, and walls of the organ, &c. I have used it daily for five or six years past, and have never, in any instance, seen any serious irritation, or any bad result to the uterus, follow its employment; whilst it has enabled me and others to detect and discriminate morbid conditions of this organ, that were, by any other means, entirely beyond the reach of correct diagnosis.

Its power of detecting retroversion of the unimpregnated uterus depends, as I have already stated, upon its directly and easily enabling us to ascertain the *direction of the uterine cavity*, and hence of the body and fundus of the uterus, which form the walls of that cavity.

When the uterus is in its normal position, and is placed with the long axis of the organ, and consequently the long axis of its cavity, in a line parallel with the axis of the pelvic brim, the point of the bougie, when introduced into the uterus, passes upwards and forwards in the direction of the umbilicus; and the concavity of the instrument (or the rough side of its handle) is directed towards the symphisis pubis. When, however, the uterus is retroverted, the point of the instrument, instead of passing up vertically and forwards, is resisted in that direction, and can only be passed horizontally and backwards towards the hollow of the sacrum; its concavity and the rough side of its handle thus looking towards the sacrum instead of towards the pubis, and at once showing the altered position of the cavity, body, and fundus of the uterus.

But the diagnosis may be made out still more completely and accurately by the further use of the bougie. For,—

1. Besides showing in the manner stated, the direction of the uterine cavity, and hence of the body and fundus of the uterus, by the direction in which the instrument itself passes,—

2. We can ascertain by a vaginal or anal examination of the supposed tumour, that the extremity of the uterine bougie is lodged in *its* centre, showing the swelling to be produced merely by the displaced fundus of the uterus; and,—

3. After this, by turning the bougie gently round so as to bring the concavity, or the rough side of its handle, to look to the pubis, instead of looking, as at first, to the sacrum, we can replace the uterus and feel it upon the bougie if required, through the abdominal parietes in front. We can thus certify to our own minds that we have nothing on the point of the instrument except the fundus uteri. And again, if necessary, by introducing a finger into the rectum or vagina, and then retroverting or replacing the uterus at will, we can as it were make and unmake, as often as required, the apparent tumour lying between the uterus and rectum, and thus further prove this tumour to be nothing whatever but the retroverted fundus uteri.

DIFFERENTIAL DIAGNOSIS OF RETROVERSION.

I have seen retroversion of the unimpregnated uterus not only very frequently and entirely overlooked, but also very often mistaken for other morbid states and lesions of the uterus. I shall point out the principal morbid conditions with which I have known it to be confounded, and the modes of distinguishing retroversion from them.

1. *From Pregnancy.*—In a considerable number of instances I have had occasion to see the feeling of fulness and apparent increased size of the uterus in retroversion mistaken for the earlier periods of utero-gestation. A few weeks ago I was called to a case at a distance from Edinburgh, where this error of diagnosis had led to much distress: from an unmarried lady, suffering severely from dysmenorrhœa and menorrhagia, being supposed by her medical attendant to be pregnant and aborting, from his mistaking the retroverted fundus and body of the uterus for general enlargement of the organ. This error

is still more liable to be committed when the retroversion is accompanied, as it sometimes is, with occasional amenorrhœa. Two or three years ago, I had under my care a patient with retroversion of the uterus and temporary amenorrhœa, who had been pronounced as undoubtedly pregnant, by her usual medical attendant, an excellent practitioner and lecturer on midwifery in another medical school. About the same time I had a patient under my own care with retroversion, who passed three successive menstrual periods; but I was certain, from no corresponding increase in the size of the retroverted uterus, that she was not pregnant. In this case the difficulty of the diagnosis was rendered the greater in consequence of the areolæ becoming darker and their follicles enlarged as in pregnancy. A drawing was made of the areolæ at the time; and afterwards, when the uterus was replaced, and the patient at last became pregnant, the areolæ were most certainly not deeper marked at the same period in the true, than what they had been in the spurious pregnancy.

2. *From Fibrous and other Tumours in the posterior Wall, &c., of the Uterus.*—This is one of the most frequent errors of diagnosis which I have met with, and one into which, in former times, I myself frequently fell.

The attendant functional symptoms are in all respects the same; and on examination there is the same continuity of structure felt between the cervix uteri and the body lying between it and the rectum. In this way retroversion of the uterus has very often been mistaken for a morbid growth upon the back part of the uterus, and even described as such(*a*).

(*a*) Dr. Hamilton, in his Outlines of Midwifery, describes retroversion as an "unequal projection" on the posterior part of the uterus. I have seen one or two patients whom he had pronounced in writing to be labouring under these "projections," and where the apparent tumour was the retroverted fundus uteri. In the work quoted he observes: "An unequal projection of different sizes is occasionally discovered on the posterior part of the uterus, resembling in shape the tubera which form upon the surface

But the introduction and direction of the uterine bougie at once enables us to solve the difficulty. The bougie passes backwards into the very body and centre of the apparent tumour, at once showing it to be the retroverted fundus uteri. It may be proper, however, to add, that instances are by no means rare in practice of the presence of small fibrous tumours attached to the posterior wall of the uterus being conjoined with retroversion.

I have known the retroverted fundus uteri to be pronounced a carcinomatous tumour, local thickening of the back walls, &c. The differential diagnosis is readily made, in the way I have just mentioned. When it has occurred after delivery I have seen it mistaken for the common puerperal hypertrophy of the uterus. The means of differential diagnosis are the same. And cases, in which the apparent swelling formed by the back wall of the deflected uterus have been (out of the pregnant and puerperal states) mistaken for simple general hypertrophy of the uterus, and assiduously treated by mercury, iodine, &c. &c., have frequently come under my notice.

3. *From Ovarian Tumours in their earlier Stages.*—When

of the liver, but differing from tubera in being of a more resisting texture, and in being pained on pressure. From the cases which have fallen under the author's notice, it appears to him that the following is the progress of this fortunately rare disease. At first there is a slight enlargement of the uterus, with a little thickening and tenderness of its posterior surface, occasioning a sense of bearing down on making any unusual exertion, and an obscure gnawing pain towards the back part of the pelvis. In the progress of the disease the posterior surface of the uterus becomes more and more unequal, till at last a distinct projection like a walnut, or even larger, can be felt on examination *per anum*. At this stage of the disease the patient can neither stand nor sit upright, such is the continued uneasiness in the back part of the pelvis. It is remarkable that in this, as well as in several other of the local diseases of the uterus, the catamenia continue to flow as usual. In the early stages of this disease the progress has been generally checked by the means employed in cases of chronic enlargement of the uterus; but in the latter stages, that is, after the circumscribed projection has taken place, no other means of treatment have hitherto proved successful."—*Outlines of Midwifery*, p. 134.

the ovary enlarges from multilocular degeneration, or other causes, it almost always first grows downwards into the space lying between the back wall of the uterus and the anterior part of the rectum, resting thus upon the roof of the vagina behind. In its enlargement it almost invariably pushes the uterus anteriorly, and *before* it; and this relative position of the uterus to ovarian tumours is often an important matter in the diagnosis of ovarian disease in its later and more advanced stages. At first the body of the enlarged ovary may be mistaken for the retroverted fundus uteri, more especially as the os uteri is generally displaced forwards. But the introduction of the bougie shows the uterus to be in its normal situation, and at the same time generally enables us to draw the uterus so far forwards as to make us certain that it is not attached to the existing tumour, and does not form one continuous structure with it. So far the evidence is merely negative. If further evidence of a positive kind, of the nature of the tumour, is required, we may obtain it by the use of a fine exploring needle, a means of diagnosis of great value in this as in other complications.

4. *From Pelvic Cellulitis.*—Inflammation of the cellular tissue of the pelvis, limited or more diffuse, is certainly a frequent disease, both after delivery and in the unimpregnated state. I have seen it now at many different periods of life, from six years up to sixty. It is generally spoken of as "pelvic abscess," but improperly so, for it does not always necessarily terminate in abscess, any more than pleurisy necessarily terminates in empyema. When the inflammatory effusion seems limited, as it sometimes is, to the space between the uterus and rectum, the firm tumour, or swelling formed by it, may be mistaken for retroversion. The direction of the bougie, when introduced into the uterus, will show us, however, that the uterus is *not* retroverted; and the accompanying symptoms, and, if necessary, the use of the exploring needle, will enable us to complete the diagnosis.

5. *From Extra-uterine Conceptions lodged between the Uterus and Rectum.*—Nauche, in his *Maladies des Femmes* (p. 108), mentions a case in which an extra-uterine conception was mistaken for a retroverted uterus. I lately met with an instance where it was a matter at first of great doubt and difficulty, whether the tumour lying on the anterior wall of the rectum, and accompanied with sudden symptoms of rupture into the peritonæum, was an enlarged and retroverted uterus, or an extra-uterine conception. Examinations with the bougie at once showed the uterus to be both normal in its size and in its position.

6. *From Organic Disease in the Anterior Wall of the Rectum.*—In a case of Dr. Marnoch's, the tactile examination of a tumour lying between the uterus and rectum gave me the idea that it was a retroverted uterus. The employment of the bougie, however, showed the uterus to be normally placed. On more minutely examining *per anum*, the anterior wall of the rectum was found much thickened and indurated; the patient died some months subsequently of carcinomatous stricture and disease of the rectum.

7. *From Stricture of the Rectum.*—The diagram of retroversion in Plate I. shows how readily this disease may be mistaken for stricture of the rectum; the deflected fundus uteri pressing in upon, and sometimes diminishing greatly, the caliber of the bowel. But the use of the bougie always readily dispels the difficulty, by showing first the direction of the fundus, and secondly (when the instrument is turned round), by at once removing the fundus and the supposed stricture. But I know that the mistake of confounding a retroverted uterus with stricture of the rectum is by no means infrequent in practice. Sir Charles Bell states that he had found a surgeon employing rectum bougies for years, on account of an obstruction from displaced uterus(*a*). A case of retroversion of the

(*a*) Institutes of Surgery, vol. ii. p. 216.

unimpregnated uterus some time ago came under the care of a medical friend of mine in Edinburgh. He discovered the displacement, introduced the wire pessary (third form), which I shall afterwards describe, and at once rendered his patient comfortable, and capable of taking exercise. She returned to her own distant home, with a line to her physician, who declared he knew the instrument well, but thought it necessary to take it out at the menstrual period, and could not again replace it. Another distinguished obstetrician was called in his place. He said the uterus was enlarged, and not displaced; used leeches, &c. Not finding the desired benefit from this treatment, the lady placed herself under the care of an eminent surgeon, who pronounced all the previous opinions wrong, and that the real disease was stricture of the rectum. The last time I heard of the patient she was submitting to the frequent use of bougies for the cure of this imaginary affection.

RETROVERSION LIABLE TO ESCAPE NOTICE EVEN IN POST MORTEM EXAMINATIONS.

In the preceding pages I have spoken of retroversion of the unimpregnated uterus being with extreme frequency entirely mistaken in practice, and overlooked during life. But even after death the same error is liable to occur. In the Edinburgh Medical and Surgical Journal for 1822, Dr. Robertson details (page 525) a case most illustrative of this remark. A woman died of tenesmus, constipation, and symptoms of obstructed bowel, ending in enteritis. Before death the rectum was examined for the obstruction, and the gut was found "encroached on by a tumour which, *per vaginam*, was discovered to be the uterus." "But," adds Dr. R., "on the *post mortem* examination, to our surprise, no uterine *tumour* was found to encroach on the rectum." In this, as in other cases in which retroversion of the uterus has existed, the morbid displacement has, on the inspection of the body after death, escaped notice, from the form and structure, and not the mere

position, of the uterus being looked to. In our common *post mortem* method of examining the pelvic contents from above, the attention of the morbid anatomist is rarely or never directed to the observation of any mere deflection of the fundus and body of the uterus; and when once the parts are dragged out of their situation, it is impossible to ascertain the amount and degree of retroversion.

ORGANIC STATE OF THE UTERUS IN RETROVERSION.

This is very variable. I have seen it several times co-existing with the presence of fibrous tumours in the uterine parietes. More frequently the uterus is hypertrophied merely from chronic metritis, and the enlargement more especially marked in the posterior walls. The organ is at the same time elongated as well as hypertrophied; and its cavity, instead of measuring two and a half inches in length, will measure three or three and a half inches. Many authors seem to think that enlargement of the uterus, under some form or another, is a necessary preliminary to retroversion taking place, and that we never meet with the displacement without finding it combined with some increase in the size of the organ. Such, however, is assuredly not the fact. In a large proportion of cases the retroverted uterus is in no degree enlarged or increased in volume, but natural in size. Nay, I have on more than one occasion seen the uterus retroverted when it was less than normal in its length and dimensions. Latterly I have happened to be consulted in several instances of amenorrhœa in women advanced beyond twenty or thirty years of life, in whom the menstrual secretion had never appeared, and where, on examination, the uterus was found imperfectly developed, and the length of its cavity, as measured by the uterine bougie, was not above one, one and a half, or at most two inches. In one of these instances, in which the cavity of the uterus was only one and a half inches long, the fundus of the preternaturally small organ was, at the same time, distinctly retroverted,

and felt like a small roundish tumour through the vagina and rectum. Some time ago I saw, with my friend Dr. Girdwood, of Paddington, a case still more rare. The uterus was retroverted, as he had ascertained by examination and the use of the bougie. There was a second orifice in the cervix uteri. On introducing a second bougie into this additional orifice, I found it pass into a second uterine cavity, quite separated and distinct from the first, and with the fundus of each diverging from the other. In fact, the uterus was not only retroverted, but double. It is, as far as I am aware, the first case in which a double uterus has been distinctly diagnosticated upon the living subject.

TREATMENT OF RETROVERSION OF THE UNIMPREGNATED UTERUS.

When recent, and occurring after some straining effort, or from congestion and inflammation of the uterus, or subsequent to delivery, mere replacement of the organ by the bougie or finger will sometimes suffice, provided, along with it, we enforce for a length of time the horizontal position, or rather lying on the side or face, prevent over-distension of the rectum and bladder, reduce any local congestive or inflammatory state that may be present, and restore the local tone of the relaxed soft structures of the pelvis by astringent vaginal injections, or by the use of medicated pessaries made with ointment containing extract of oak-bark, or tannin, or iodide of lead, &c.

But such simple treatment rarely succeeds, even when the retroversion is recent; and still more seldom when, as is almost always the case in practice, the displacement is already chronic and confirmed. Under these circumstances we have three principal indications to perform :—1. To remove, if necessary and possible, any morbid action in the uterine structures that may exist along with the displacement. 2. To restore the uterus to its normal situation. 3. To use means to retain it

in its replaced and natural position. I shall speak separately of these several indications.

1. *Removal of any Morbid State of the Uterus that may co-exist with the Retroversion.*—Not unfrequently, along with retroversion, the uterus is congested and hypertrophied, and the uterine bougie shows it to be elongated half an inch or more. Sometimes chronic inflammation of the body of the organ is present, and more especially in its posterior wall, which often feels tumefied and tender to the touch: or the cervix is enlarged, condensed, and ulcerated, especially in its posterior lip. The os uteri, or the uterine canal, an inch or so above the os, is not unfrequently contracted and strictured, and may have been giving rise to retention of the menses and congestion. Occasionally one or both ovaries can be felt through the roof of the vagina, enlarged and painful from congestive or inflammatory irritation. As a general rule, all these morbid states should, when possible, be reduced and removed, or at least moderated by their appropriate means of treatment, before engaging with the other indications to be fulfilled, particularly when they are apparently in any respect the *cause* of the retroversion. More frequently, however, they are the *effects* of the retroversion; and in this latter case our means of combating them will usually fail, or only partially succeed, till we have first restored the organ to its natural form and situation, by our fulfilling the second and third indications which I have laid down, before we fulfil the first. When the retroversion is combined with and produced by the presence of fibrous tumours in the posterior wall or fundus of the uterus, the first indication cannot, of course, be accomplished, as we as yet possess no certain power of removing and discussing these tumours.

2. *Restoration of the Uterus to its Normal Situation.*—Most authors who have treated of retroversion of the unimpregnated uterus have spoken as if its replacement could generally be fully effected by the fingers alone. In practice, however, its

complete replacement by this means is almost always found to be impossible. By pushing up the retroverted fundus, or by pulling down the cervix, or by combining simultaneously both measures, the replacement can sometimes be effected by the fingers alone; but rarely. For it is scarcely ever possible, by any pressure which we can make with the fingers upon the posterior surface of the uterus, either through the vagina or through the rectum, to push the fundus uteri upwards and forwards to a sufficient degree. Some authors, finding their fingers to fail, from their shortness, &c. have proposed instruments for the purpose. Richter and Evrat suggested a species of vectis or probang, to be used through the rectum. Bellanger, Lallemand, and Duges, have spoken of introducing a strong sound into the urethra and bladder, to act as a lever upon the os uteri. Siebold and Drejer attempted to replace the uterus by instruments made of whalebone, introduced into the vagina, and made to press by their upper and blunted extremities upon the fundus uteri through the upper and back portion of the vaginal parietes.

The simplest and most easy method of temporarily replacing the retroverted uterus is by introducing an instrument into the cavity of the organ itself, and using it as a mechanical means, or lever, for the purpose. In treating of the physical diagnosis of retroversion, I have shewn how the uterine bougie can be readily used for this purpose. The very means of diagnosis are thus, at the same time, the very means of replacement.

3. *Retention of the Replaced Uterus in its Normal Situation.* —This is necessary to effect a cure. Some, as Schmitt and Schweighœuser, have supposed that it could be accomplished by the mere position of the patient, and that lying on the side or face, with the pelvis somewhat elevated, would be sufficient. I have already stated that in few,—exceedingly few cases, indeed,—will it be found to succeed, and these only of recent origin. Instruments for the purpose of supporting and retain-

ing the uterus *in situ* are therefore necessary. They have been proposed to be worn in the rectum(*a*) and in the vagina(*b*). Various forms and modifications of vaginal pessaries have been invented by Hervez, Drejer, Sander, &c. They are all intended either to press principally, by guarded stems or otherwise, through the roof of the vagina, upon the tumour formed by the fundus uteri; or to keep the cervix uteri pushed back, with the view of throwing the fundus forwards. I have used sponges for this last purpose; and Siebold and Kilian state, that they believe they form the best pessaries for retroversion, modified according to the necessities of each case. Moreau conceives that the principle of treatment should be to fill up the space between the uterus and rectum, so as to take away any room for the retroversion to recur: he uses a kind of caoutchouc pessary for this purpose. Two years ago I removed from a patient one which had been worn for some months, and which Moreau himself had introduced. It had not in any degree benefited the retroversion.

After detecting the ease and certainty with which the uterine bougie could be used for the discovery of retroversion, and for the temporary restitution of the organ, it appeared to me that the most direct and perfect method of retaining the replaced uterus *in situ* would consist in some means of retaining and fixing, as it were, the end of the bougie for a time in the uterine cavity. I soon found that the restoration of the uterus temporarily, from day to day, with the bougie, was insufficient, and that some more permanent means of keeping the organ replaced and retained were necessary But one primary and important point required to be solved:—Would the uterus bear with impunity the presence of such a body for a length of time in its own cavity? My first experiment on the subject I made with extreme anxiety, and great misgivings as to the results. I watched the case from hour to hour, and from day

(*a*) Ætius, Vernandois, Desault. (*b*) Colombat, Dugês, &c.

to day, and was delighted to find that the presence of the instrument was borne by the uterus without irritation or annoyance. The patient was almost entirely incapacitated from walking, by retroversion of the uterus, before it was used. After thus wearing for some months a wire pessary in the cavity of the uterus, she so far recovered as to bear two children, one in this country, and subsequently another in India. I soon found, in other cases, that, when the instrument was once properly fitted and adjusted, it could be borne with perfect safety, and without any pain or inconvenience. Occasionally I have since met with cases in which the uterine pessary has created so much irritation as to render its withdrawal necessary in a few days after it was introduced. But these cases have been exceptions, and by no means common or frequent exceptions, to the general rule; and I have allowed the instrument sometimes to remain in the uterus for two, four, six months, or longer. Within the last few weeks I have removed two uterine pessaries, one of which I had introduced eight, and the other nearly ten months previously. They are not to be interfered with at the menstrual periods. Sometimes, though by no means always, a slight menorrhagia follows their use, particularly for the first period or two after their introduction.

It is unnecessary to detail the changes of form which were tried, and the difficulties I met with, in first attempting to construct a proper uterine pessary. The three forms which I have been in the habit of using for the last three or four years are those depicted in Plate II.(*a*)

First form of Uterine Pessary, Plate II. fig. 4.—The stem of the instrument (2⅓ inches long) (d) is introduced into the uterine cavity; the lips of the cervix uteri rest upon the flattened ovoid bulb or ball. Fig. 5 shows the lower surface of

(*a*) Mr. Young, our cutler in Edinburgh, makes them of German silver; sometimes he has electrotyped them for me but this addition is unnecessary.

the bulb or ball, with an orifice in it to allow of the end (a) of a handle (fig. 6), about 8 inches in length, to be fixed in it, for facilitating its introduction into the uterus. This form of pessary generally answers much better for antiversion than for retroversion. Occasionally I have had the bulb made of lead, that it might serve as a counterpoise to hold the os uteri *in situ*. The instrument, however, is imperfect, from the impossibility usually of retaining it in the uterus above a few days, the canal relaxing and dilating, and allowing of its escape. In fact it is exactly the form of bougie which I generally use to dilate the os and canal of the uterus in cases of stricture, in any cases in which I do not employ the knife or hysterotome for that purpose.

Second Form of Pessary, fig. 3,—Has a similar uterine stem and bulb, and in addition a large ovoid disc, $2\frac{5}{8}$ inches in length, $1\frac{1}{4}$ inch broad, and $\frac{1}{2}$ an inch in depth, to retain the instrument *in situ*. The bulb (b) for the cervix uteri to rest upon is fixed in the middle of the disc, and the uterine stem (c) is moveable to a certain extent upon it. This is necessary in consequence of the size of the retaining disc, and the impossibility of introducing the instrument into the uterus and genital passages, with the stem fixed upright, and at right angles to the plane of the disc. The dotted line (d) represents the stem laid down, as is required in the introduction and withdrawal of the instrument. On the lower surface of the instrument (which is not seen in the figure) there is a spring-catch to hold the stem fixed and upright after the instrument is introduced, and capable of being unlocked by the nail when the instrument requires to be again withdrawn. The expanded disc, by pressing on the sides of the vagina, enables the uterine portion of the pessary to keep its situation. In some cases this instrument answers well in retaining the replaced uterus. But occasionally, when the *tendency* to displacement is *great*, this form of pessary is altogether inadequate, and will be moved about by the changes of position which the uterus itself undergoes. The

remaining form which I most frequently employ is free from these disadvantages. The two first forms are, when used, altogether concealed within the genital passages. In this third form a portion of the instrument is placed externally, and another internally.

Third Form of Pessary.—It is made up of two parts:—1. *An internal part* (fig. 2), provided, like the two preceding pessaries, with a stem (f), to pass into the uterine cavity; a bulb or ball (e), for the cervix to rest upon; and, in addition, a vaginal portion, or curvilinear tube (d). 2. *An external part* (fig. 1), consisting of a wire frame-work (a, c, s), to maintain and hold the internal portion *in situ*. This external part, or wire frame, is about five inches long; at its lowest or vaginal portion it is about $\frac{1}{2}$ an inch broad; and towards its upper, or pubic portion, it suddenly swells out to 3 inches in breadth. From the vaginal extremity of this frame projects, at nearly right angles to it, a flat tubular portion (s) $2\frac{1}{2}$ inches long, closed at its further extremity, like the point of a female catheter, and fitted to slide into and fix in the corresponding open tube (*a*) attached to the bulb of the internal half of the instrument(*b*).

In the Plate the uterine stem of the instrument is represented as placed in the cavity (h) of the uterus, a section of the organ (f) being outlined around it. In introducing the instrument, the internal portion, fig. 2, is first passed into the uterus and vagina, in the same way as the uterine bougie is passed

(*a*) I have a patient at present wearing one of these pessaries with a stem three and a half inches long. The retroverted uterus is enlarged and elongated by fibrous tumours in its walls, and one of the ordinary pessaries did not suffice to hold it replaced.

(*b*) The different parts of the pessaries in figures 1, 2, and 3, are represented as somewhat below their actual size, in order to suit the size of the plate. The bulb or ball is, in general, made an inch and half long, one inch broad, and about half an inch thick. I have sometimes used a larger bulb. When smaller it is apt to produce dilatation of the os uteri, and even to pass partially into it.

[The accompanying plates were kindly furnished by Dr. Simpson.—Ed.]

for the purpose of diagnosis. The retroverted uterus is then replaced by raising it up upon this portion of the instrument, which is turned round for that purpose. After the organ is replaced, the solid vaginal portion attached to the external frame of the pessary is slid into the corresponding vaginal tube (d) of the internal half of the instrument, locking into it on the same principle as the stilet locks into the canula of a curved trocar. Thus the instrument is, as it were, rendered at once completely solid and fixed. In order to have room to lock the two portions together, it is necessary, in general, first to bend back the pubic portion of the external frame-work to a very considerable extent, for the purpose of avoiding its being caught and impeded by the anterior part of the pelvis or pubis. After the locking is accomplished, this pubic portion of the instrument is bent, and moulded upon the anterior portion of the pelvis, so as to fit it as exactly as possible. Formerly I was in the habit of attempting to keep the instrument more permanently fixed, by having elastic tapes fixed posteriorly into the apertures (c), and anteriorly into those still represented in the upper part of the pubic portion of the instrument; and both attached to a band encircling the trunk of the body. This arrangement I always now dispense with as unnecessary. If the pubic portion of the pessary is properly bent in over the pubis, it generally takes a sufficient hold; and if ought more is found necessary, all that is required, in addition, is, that the patient wear a common napkin, or understrap, to pass between the limbs and over the instrument. Latterly I have had the instrument made without the part (c) projecting posteriorly.

It is, perhaps, almost unnecessary to add that, if the instrument is found to press disagreeably on any part, it may be easily bent without removing it, so as to take off that pressure; and it may thus require to be modelled and adjusted again and again in various parts, it order that it may be ultimately worn without annoyance and inconvenience.

When required to be withdrawn, the pubic portion is first

bent back, so as to be clear of the pubis; then the vaginal pieces are unlocked; and, lastly, the internal part is extracted.

The time during which it requires to be worn, in order to effect a cure, varies in different cases from one or two weeks to many months. The recent or chronic character of the case, and particularly the degree of tendency to the recurrence of the retroversion, are our principal guides on this head.

The employment of these uterine pessaries will cure many, but by no means all cases of retroversion of the unimpregnated uterus. And even when not sufficient to cure, they will generally relieve the patient, and palliate her annoyances and sufferings.

If the retroversion were causing no unpleasant symptoms, nor interfering with the functions of the uterus, I have always recommended the avoidance instead of the adoption of local measures and remedies, either mechanical or others. When the reverse was the case, I have employed the means I have mentioned, with the effect of curing many and of relieving others. In the few exceptional cases in which no pessary could be borne, in consequence of the irritable state of the uterus, or where they failed to produce a cure, I have contented myself with reducing this morbid state of the parts by leeching, external counter-irritation, the application of belladonna ointment pessaries, &c., and rest, in the first instance, followed afterwards by the employment of local and general tonic measures. The patient often derives much relief from wearing an abdominal bandage (as those of Hamilton and Hull), with a supporting perinæal pad.

I have not entered into the consideration of the *Causes* of retroversion of the unimpregnated uterus. An explanation of these causes, and, indeed, of uterine displacement in general, is only to be found, I believe, in a complete study of the forms, relations, and functions of the different parts and layers of the

pelvic fascia. In retroversion, those portions of this fascia which unite the back part of the uterus to the rectum and pelvic cavity behind, partially yield and give way. To re-strengthen this support, and allow of its renovation, retention of the uterus for a length of time in the position and mode I have described, often suffices. The simultaneous use of local injections and baths aid further the same view. But I allude here to the subject principally to observe that we may yet find further means of strengthening the weakened tissues, by indurating and contracting the upper and posterior portion of the vagina, as by the use of caustics, thus taking advantage of that contracting and strengthening power of the new tissue of cicatrices which burned surfaces particularly have. I think I have seen the application of nitric acid and potassa to the posterior lip of the uterus, produce replacement.

BIBLIOGRAPHICAL NOTE.

In the fifth century Ætius treated definitely and at length of retroversion of the unimpregnated uterus (*Tetrabiblos*, sermo iv. cap. 77); Moschion has left us some notices of it (*Spachius' Gynæcia*, p. 24); and in his work on female diseases, Roderick a Castro has some observations upon it (*De Universa Muliebrium Morborum Medicina*, p. 274). In modern medical literature, the first individual case of retroversion of the unimpregnated uterus that was put upon record was reported by Saxtorph, in 1775 (*Collectanea Hauvniensia*, vol. ii. p. 129). In 1779 Willich described a second case (*Richter's Bibliothek*, vol. v.). In 1786, in a woman who died of pulmonary disease, Peter Frank found the uterus greatly retroverted, and published a notice and drawing of the displacement (*Opuscula Posthuma*, p. 78). In 1787, Jahn noticed its occasional occurrence in the unimpregnated uterus, but considered it "too obscure and too unimportant to deserve the name of a disease" (*Dissertatio de Utero Retroflexo*, in Schlegel's *Sylloge Operum Minorum Præstantiorum ad Artem Obstetricam*, &c., p. 612). A few years subsequently, Schneider (*Richter's Bibliothek*, vol. xi.) and Kirschner (*Stark's Archives*, vol. iv.) published each a case of this affection. In 1817 Schweighauser of Strasbourg pointed out that retroversion of the unimpregnated uterus was far from being rare, and he asserted it to occur much more frequently than in the gravid uterus (*Aufsätze uber einige Physiologische und Praktische Gegenstande der Geburtshülfe*). In 1820, Schmitt published at

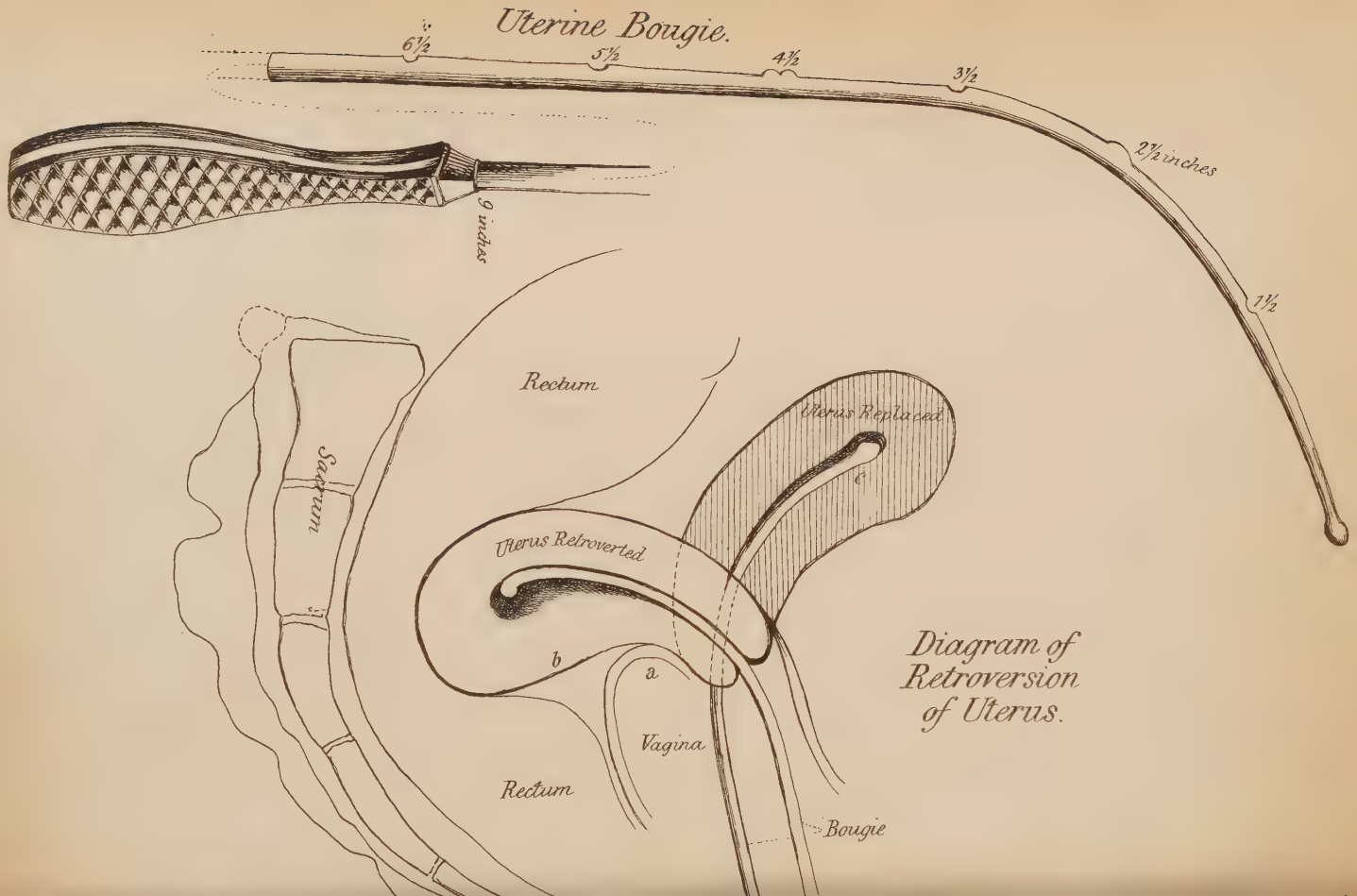
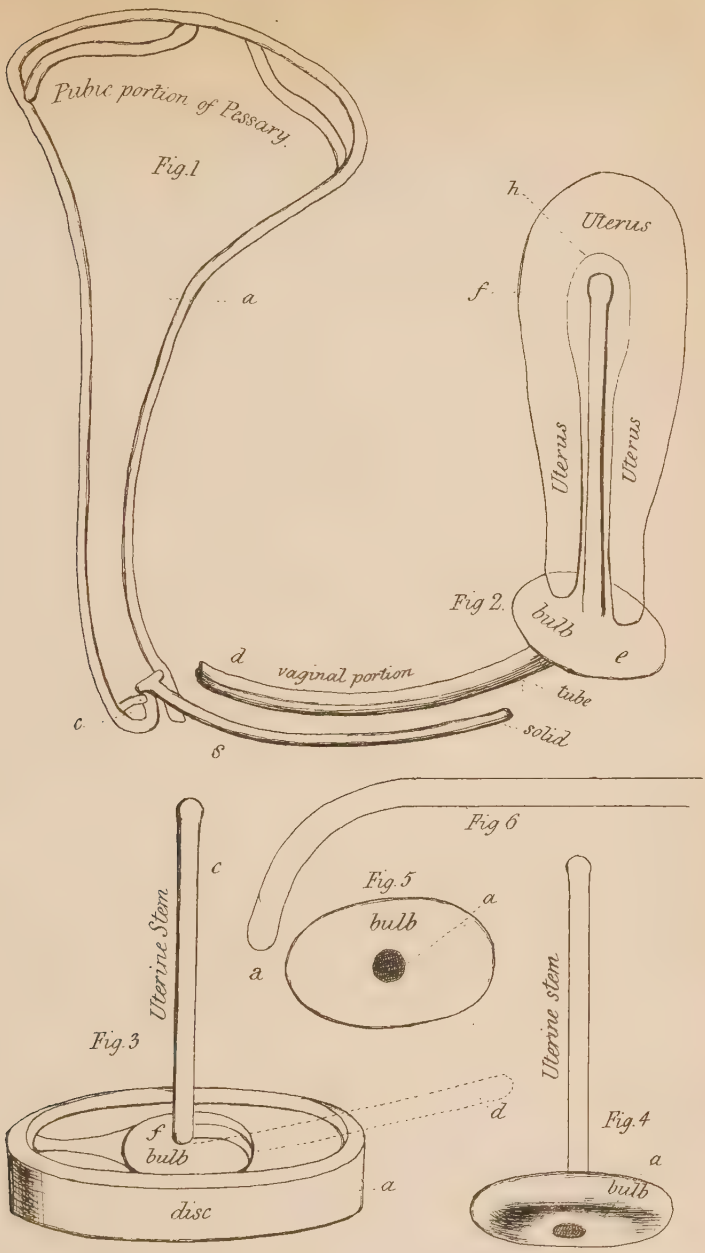


Plate I. Dr. Simpson on Retroversion.

Plate II. Pessaries for Retroversion &c.



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Vienna an essay taking the same view (*Uber die Zurückbeugung de Gebärmutter bei Nichtschwangeren*, &c.) Subsequently individual cases of retroversion of the unimpregnated uterus, or more general remarks regarding it, have been published by D'Outrepont (*Zeitschrift für Geburtskunde*, 1827), Denman (*Introduction to the Practice of Midwifery*, p. 138), Cooper (*Anatomy and Surgical Treatment of Abdominal Hernia*, part ii. p. 59, 1827), Robertson (*Edinburgh Medical and Surgical Journal*, 1822, vol. xviii. p. 520), Velpeau (*Traite de l'Art des Accouchemens*, vol. ii. p. 622), Bazin de Bassenoville (*Memoire sur la Retroversion de l'Uterus*, 1837), Moreau (*Traité Pratique des Accouchemens*, vol. i. 1838), &c., &c. I have referred in a preceding page to the first observations which I published on the matter, in the Abstract of the Proceedings of the Medico-Chirurgical Society of Edinburgh. I shall extract these remarks from the Monthly Journal of Medical Science for July, 1843, p. 660: "As one of the most important of all these applications of the uterine bougie, Dr. Simpson demonstrated that, by showing the *direction* of the uterine cavity, and hence of the uterus itself, and by its enabling us, when it is introduced, to change at will the position of the organ, it afforded a simple means of detecting those displacements of the unimpregnated uterus known by the names of retroversion and retroflexion, antiversion and antiflexion,—states that Dr. Simpson further showed were *very common*, and which, from the want of proper means of diagnosis, had been almost constantly mistaken for fibrous, carcinomatous, and other tumours situated between the uterus and rectum, or between the uterus and bladder. In cases of retroflexion and antiflexion of the unimpregnated uterus, the organ can with facility be temporarily restored to its normal position and relations, by turning the uterine bougie, when used as a means of diagnosis. Dr. Simpson proposed to maintain and fix the bougie in the uterine cavity for a length of time as a means of cure. He laid before the Society a number of utero-vaginal pessaries, which had been used by him for this purpose. They were constructed of nickel and silver wire, and had each attached to them a part which passed up to the fundus uteri. Some of them had been worn for weeks and months in the uterine cavity, and had produced little or no irritation." In 1846, Dr. Rigby published some excellent and accurate observations on the disease (*Medical Times*, p. 292, &c.); and more lately Dr. Protheroe Smith has written on the subject (*Obstetric Record*, p. 35, &c.); see also Mr. Hensley (*Provincial Medical and Surgical Journal* for January, 1848); and Dr. Beatty (*Dublin Journal* for November, 1847); &c.

Art. XIII.—*Observations on the Pathology and Treatment of Gonorrhœal Discharges in the Female.* By John C. Egan, M. D., M. R. I. A., F. R. C. S. I., lately one of the Surgeons to the Westmoreland Lock Hospital.

[Read before the Surgical Society of Ireland, March 18, 1848.]

Since the time of Hunter to the present day, venereal diseases, in all their varied forms, local and constitutional, have received more than an ordinary share of attention from well educated practitioners of every country; and, however conflicting the opinions as regards the history and pathology of these affections, or however different the treatment pursued in the choice and application of remedial agents, it must be acknowledged that extensive opportunities of investigation and considerable research have been brought to bear, by the majority of contributors, to this branch of special pathology.

The practice of inoculation, in assisting the diagnosis and treatment of this class of diseases, has afforded us ample means of distinguishing between two affections previously considered by many as identical; and the discovery of urethral chancres, while it explains an apparent anomaly, has tended, in no insignificant degree, to pave the way to a more scientific and certain mode of cure.

But if we examine the records of syphilitic surgery, we will find that the observations and experiments of British authors have, with the exception of a few, whose experience had been acquired in continental institutions, been exclusively confined to the male sex; while the disease, as it exhibits itself in the female, is passed over in so loose and desultory a manner as to lead the reader to imagine that there is no appreciable difference in the symptoms, and that the line of treatment recommended in the one sex is to be strictly adhered to in the other. That this, as a general rule, will hold good, must be obvious to all; but that it is to be received as an universal law,

to which no exception can be added, would be, indeed, to argue from false and inconclusive premises, and would betray an amount of ignorance inconsistent with the education of any practitioner in surgery at present.

It is true, as has long since been stated by Mr. Hunter's commentator, Dr. Adams, that chancres are the same in the female as the male,—that the same precise degree of induration and excavation is attendant on the true syphilitic ulcer in the one sex as the other,—and that all the varieties of venereal ulceration in the male and female bear a close similitude to each other, and are alike amenable to the test of inoculation. It is equally true that all the forms of eruption, commonly called secondary symptoms, consequent on primary infection, together with the modifications of sore throat, are identical in both sexes, and that when the disease attacks the osseous system it admits of no distinct classification. So far we have an unity of symptoms, and a corresponding sameness of treatment necessary. If, however, we prosecute our inquiry still further, and examine other forms of disease consequent on impure sexual intercourse, of far greater importance, because of much greater frequency at the present day, we will discover that the same analogy that we might, *à priori*, expect to meet, does not now hold good, and that our opinion as to the structures engaged, and the remedies to be employed, must undergo a decided change, if we wish to treat this other form of disease on sound and scientific principles, and if we would desire to be successful in our practice. I allude to gonorrhœal discharges, the pathology and treatment of which, in the female, will form the subject of this communication. Did space permit, it might not be considered as altogether uninteresting or uninstructive to trace the history of gonorrhœa, and to demonstrate, which I conceive can be easily done, from historic evidence, both sacred and profane, its existence in the earliest and most remote ages of the world. As such an inquiry, however, would, if carefully and accurately conducted, demand more space than is gene-

rally allotted to papers such as this, I pass on to the consideration of topics of more practical utility.

If we examine, by way of contrast, this affection as it presents in the male, we will be able to ascribe it to inflammation, of a more or less acute nature, of the mucous membrane of the urethra, accompanied by the secretion of muco-purulent matter, generally attended with pain and irritation in voiding the urine, and with involuntary erections of the penis. This inflammation is owing to the anatomical arrangement of the mucous membrane in this particular situation, most commonly limited to the fossa navicularis and neighbourhood of the bulb; contrary, however, to the opinion of Hunter, it sometimes engages the whole extent of the mucous lining of the urethra, constituting the gonorrhœa virulenta of some authors,—a term restricted by others to the disease when attended with chancres in the urethra.

Insufficient opportunity, together with the force of prejudice, have hitherto operated against the employment of the speculum vaginæ on any very extensive scale in this country; and we are consequently obliged to refer to results furnished by continental hospitals, in order to guide us in arriving at any conclusion as regards the pathology of vaginal discharges. How far these results have been attested, and to what extent they may be relied upon in leading us to any correct knowledge of the principal cause of the disease, as it presents itself in this country, we shall now proceed to inquire.

Chancres of the cervix uteri are of such rare occurrence as seldom to form the cause of vaginal discharges, or to simulate gonorrhœa. Thus in his treatise on Venereal Diseases, M. Ricord only details the history of one such case; and in his table of inoculations but twelve instances are recorded as coming under his notice in the venereal hospital from 1831 to 1836.

M. Gibert, for many years physician to the Lourcine, met with but three examples; M. Cullerier, during a long attend-

ance on the Paris venereal hospital, observed but three; Mr. Bennett, for seven years connected with the Paris hospital, witnessed only two. MM. Emery and Duparcque, whose practice in uterine diseases has been by no means inconsiderable, look upon this form of disease as extremely uncommon; and I may add, that during a period of upwards of four years, which I had been attached to the Lock Hospital in this city, I did not see a single example of the Hunterian chancre on the cervix uteri. But although this specific form of ulceration is seldom encountered by those who enjoy the most extensive opportunities of investigation, yet there is a species of ulceration met with and described by writers of the French school, as exceedingly common in females affected with vaginal discharges, and which they denominate "granular erosion." "This ulceration," says M. Gibert, "always rather superficial, generally has a rounded form, and is more or less plainly limited; it occupies sometimes the superior lips, sometimes the inferior, and sometimes the two, and sometimes it even appears to penetrate into the cavity of the cervix uteri: its surface is red and granular, and contrasts notably with the smooth and polished surface of the normal neck, and it bleeds easily. Generally speaking, a veil of viscous, semi-transparent mucus, which flows from the orifice of the neck of the uterus, covers the granular erosion." Out of 500 cases which he examined, M. Gibert discovered the existence of this form of ulceration in 144, some of whom, however, were exempt from any vaginal discharge. M. Ricord states that this condition of the cervix is met with in nineteen out of twenty cases of gonorrhœal discharge, and that whenever these peculiar erosions are discovered, there can be no doubt of the gonorrhœal origin of the disease; and thus relies almost exclusively on this symptom in forming a differential diagnosis between this disease and leucorrhœa. Mr. Bennett, to whom I have already alluded, is of opinion, that this peculiar lesion is not only exceedingly

common in women labouring under blennorrhagic discharges, but is also frequently to be found in females suffering from the secondary forms of syphilis. "In the spring and summer of 1843," he writes, "whilst in charge at St. Louis of a female skin ward of seventy-five beds, in which there were always a great number of syphilitical skin-affections, I carefully examined with the speculum all that were so affected, in order to ascertain what was the state of the internal genital organs. I was led to adopt this course by finding, *on inquiry*, that several of these patients who presented no syphilitical disease of the external genital organs, except trifling leucorrhœa, were labouring under the symptoms I have enumerated as indicating slight inflammation and ulceration of the cervix uteri. On examining these latter patients I found the cervix ulcerated, and slightly indurated, and it then occurred to me that others might be similarly affected, although they had not directed my attention to any symptoms of uterine disease. To my great surprise I found that three out of four, perhaps more, also presented ulcerations of the cervix. Most of these patients were young women, who had either never borne children, or had been confined several years previously, and were under treatment for syphilitical psoriasis, lichen, rupia, &c." And further on he adds: "The prevalence of ulceration in women labouring under the various forms of syphilis, without vaginitis, is certainly singular, but I am inclined to attribute it to the abandoned life which they nearly all lead, or have led."

Mr. Acton, formerly externe at the female venereal hospital, Paris, observes: "We have found the mucous membrane, in its whole extent, or in isolated points, of a red colour, accompanied by swelling, heat, and pain, unattended by any secretion, thus presenting an erysipelatous state, which may last a short time, and then disappear. We have seen other cases, which presented the first stage of catarrhal inflammation, give rise to a morbid secretion, the colour and consistence of

which are very variable: this difference seems to have no reference to the cause which has produced it. In examining the vulva, vagina, or neck of the uterus, we have observed the mucous membrane covered with papulæ, or follicles, more or less developed, constituting a papular vaginitis, or utero-vaginitis, a *psorélytrie*, as M. Ricord terms it, sometimes assuming the form of small spots, in size not larger than a pin's head, and isolated, or more or less confluent. In other cases these papulæ look like granulations deprived of their epithelium; lastly, they may assume a fungous appearance of the form of vegetations. On the same portions of the mucous membrane we have distinctly seen patches, more or less numerous, and varying in extent, which have a striking analogy with the suppurating surface of the skin, on which a blister has been applied." "M. Ricord," he adds, "has likewise witnessed a case in which an eruption of herpes phlyctenoides was present on the neck of the uterus and the posterior part of the vagina; lastly, we may find ulcerations of every description seated on the whole or any part of the surface of the genito-urinary mucous membrane."

Illustrative of the foregoing description, Mr. Acton has furnished a fasciculus of plates, exhibiting the different appearances presented on examination of the vagina and neck of the uterus. Inflammation of the vulva and vagina has been found to exist solely, or conjointly with a granular condition of the cervix uteri; and the urethra has been stated by M. Ricord to be affected in eight out of every twelve cases of gonorrhœa.

Having thus briefly reviewed the labours, and recorded the opinions, of those whose investigations had been carried on in continental hospitals, I shall now proceed to the description of those cases which came under my immediate inspection in our Lock Hospital. The prevalence of gonorrhœa during the last few years in this city afforded me an opportunity of examining, by means of the speculum, a vast number of females affected

with vaginal discharges, many of whom were at the same time labouring under some of the secondary or tertiary forms of syphilis, in most instances the result of previous infection.

As no British hospital has, as far as I am aware, contributed any information on the pathology or treatment of gonorrhœa in the female, the following details, which I have drawn up in a statistical form, and which differ in some important particulars from those furnished by the majority of writers already cited, will not, I trust, prove altogether devoid of interest to the profession. The particulars of the cases, and the appearances presented, were carefully and accurately noted, in the presence of the patients, immediately after examination; and in no instance have I trusted to memory for a description of the appearances about to be detailed.

I possess a tabulated statistical summary of the particulars of 112 cases(*a*), from which it will at once be evident that gonorrhœa in the female is not confined to the vagina, as is generally supposed, but extends itself to the uterus, always, as far as my observation goes, involving the neck of that organ, and very frequently penetrating the cavity of the uterus itself, and thus, by a vitiated secretion of muco-purulent matter from the cervix uteri, or from the internal lining membrane of the uterus, the disease may be kept up for an indefinite period, while the vagina may be perfectly healthy. Such was the case in fourteen instances detailed, in which no disease of the vulva or nymphæ was apparent, while a copious discharge was the result of a diseased state of the uterus.

In ninety-eight cases the vagina presented a more or less inflamed appearance.

In thirty-eight, granular erosions were apparent on the cervix uteri, with attendant induration in six.

In fifty-seven the os and cervix exhibited an erythematous condition, generally accompanied with engorgement and slight induration.

(*a*) These tables were exhibited at the Surgical Society.

In six there was hypertrophy of the anterior lip of the os uteri.

In six there was enlargement of the posterior lip. In thirteen both lips were equally engaged.

In ninety-seven the uterus participated in the disease, which was evinced by a muco-purulent discharge from the os.

The duration of the disease previous to examination was as follows:

CASES.	WEEKS.	CASES.	MONTHS.	CASES.	YEARS.
1	1	11	1	11	1
11	2	18	2	8	2
8	3	7	3	1	3
3	5	4	4	1	4
1	6	4	5	1	7
1	10	8	6	1	8
1	11	2	8		
		3	9		
		4	18		

In describing the form of vaginal inflammation met with, I have termed it subacute, but this, it will be remembered, was the condition found at the time when examination by means of the speculum was allowable, as in every instance of recent infection this state was preceded by inflammatory symptoms of an acute nature, where the introduction of the speculum was, for obvious reasons, contra-indicated. The mucous membrane of the vagina, especially at its superior part, was occasionally the seat of abrasions; this appearance was observable sometimes in isolated patches, and sometimes as one continuous superficial breach of surface; in a few of these the skin was either affected with a papular eruption at the time of examination, or subsequently became so: whether this secondary form of disease was owing to the action of the gonorrhœal secretion, or consequent on previous infection, I do not undertake to decide(*a*).

(*a*) "Under no circumstances can it (gonorrhœa) produce chancre; but as an irritating matter, like that of coryza for instance, it may excoriate the

The interior of the vagina has likewise, in a few cases, presented that papular or follicular condition, described by M. Ricord, which will be seen by reference to the table.

It will further be observed that granular erosions of the neck of the uterus were only discernible in about one-third of the patients subjected to examination, a statement at variance with the results of continental writers, more especially with those of M. Ricord, who affirms that this peculiar lesion of the cervix uteri is to be found in nineteen out of twenty cases of gonorrhœa, thus enabling him to decide between the infectious and the more common forms of vaginal discharges to which females are liable. I think, however, from the absence of this symptom of disease in women, where no doubt can exist as to the venereal origin of the affection, and, on the other hand, from its occasional presence in females labouring under leucorrhœa(*a*), whose rank of life and virtuous habits place them beyond all suspicion of infection, we would not be justified, in this country at least, in pronouncing, either in a medico-legal point of view or otherwise, a positive opinion as to the nature of the disease from any evidence derived from this source; the only testimony, therefore, on which we can rely with any degree of certainty, must be grounded on the previous history of the case, which, for obvious reasons, cannot be at all times implicitly depended upon.

The most common appearance I have met with is that which I have described as an erythematous condition of the cervix, generally accompanied with engorgement and slight induration; this was in many cases concealed from view by the intervention of a thin, semitransparent stratum of muco-purulent matter, with which the inflamed cervix was slightly coated. This condition was almost invariably accompanied with a dis-

skin, with which it remains sometimes in contact, but it never produces a specific ulcer."—*Ricord*, p. 59.

(*a*) See a paper on affections of the uterus, by Dr. Evory Kennedy, in the Dublin Quarterly Journal, for February, 1847.

charge, from the interior of the uterus, of a very tenacious and almost purulent matter, forming in this respect a marked difference between this secretion and that furnished by the vagina and exterior of the uterus. A string of this ropy material was generally found suspended from the os tincæ, which was with considerable difficulty disengaged and removed with the assistance of a sponge. This, together with menstrual irregularity, will, I doubt not, in a great measure, account for the almost universal sterility common to this class of females. The same disposition has been observed by Messrs. Gendrin, Jobert, and Emery, in young married women labouring under leucorrhœa(*a*).

The duration of the disease will appear, perhaps, to some unusually protracted, extending, in one instance, over a period of eight years: it must, however, be borne in mind, that the individuals of whom this Essay treats, were, for the most part, from their dissolute habits, continually the subjects of renewed infection, their sole subsistence being derived from a constant life of prostitution. But such was not the case with all. Some there were, who, determined to abandon a life of misery and profligacy, but against whom—destined to suffer "the orphanage that springs not from the grave"—were closed for ever the doors of that humble, but once virtuous and happy home, whence they had been allured by the snares of their heartless seducer, took refuge within the walls of one of those quiet retreats which afford an asylum to the unprotected: in some of those, relapses after apparent cure, brought on by bodily exertion, as washing, &c., were by no means unfrequent. This form of disease, the consecutive gonorrhœa of Hecker, appeared to be the result of a general relaxation of constitution, in which a tonic line of treatment was obviously indicated. In these latter cases the interior of the uterus was always affected(*b*).

(*a*) See Bennett on Inflammation, &c., of the Neck of the Uterus, p. 21.

(*b*) Attached to the Lock Hospital is an asylum for a limited number of

The symptoms present on the invasion of the disease were generally of an inflammatory nature, swelling of one or both labiæ, pain and difficulty in micturition, with a sensation of heat and weight in the lower part of the pelvis; these generally subsided in a few days by rest in the recumbent posture, a copious use of demulcent drinks, with the occasional aid of fomentations; a spare form of dietary being at the same time strictly enjoined. General depletion was seldom resorted to, and local blood-letting was always contra-indicated, from the disposition which leech-bites, under those circumstances, assume to degenerate into foul and unmanageable ulcers. Nauseating doses of tartar emetic were found to answer fully every indication required in this stage of the disease. Unlike the same affection in the male, we possess no remedy which can exert any specific influence over the disease when taken internally. The balsams, cubebs, &c., which are found so efficacious in arresting the discharge in the male, may be looked upon as almost inert in the female; our attention must, therefore, be principally directed to local applications, which it will be necessary to alternate one with the other during the course of treatment. Solutions of chloride of lime, and injections of alum, are extremely useful in cleansing the parts and astringing the vagina, which is usually in a relaxed condition; and in a more advanced stage, a strong solution of nitrate of silver injected into the vagina will be found to act beneficially.

The most successful plan of treatment, however, is that recommended by M. Ricord, which consists in the application of the solid nitrate of silver to the sides of the vagina and neck of the uterus; the immediate effect of this application will be to increase the discharge, but it will, after a few repetitions,

females, who, when convalescent, frequently avail themselves of the advantages this institution offers; and in immediate connexion with it, but on a larger scale, is another of a similar nature. Both these penitentiaries have been established by the indefatigable and philanthropic exertions of P. Æ. Singer, Esq., the senior governor of the hospital.

either diminish it considerably, or arrest it altogether. I have likewise been in the habit of applying to the same diseased structures, and with like beneficial results, the acid nitrate of mercury; this caustic I have found to succeed when the nitrate of silver had failed in effecting a cure. I may here, in passing, observe, that in many cases of inveterate amenorrhœa, which had resisted every form of constitutional treatment, the direct application of caustics to the cervix uteri was followed by a re-establishment of the healthy uterine secretion, at first scanty, but after a short time normal, both as to quality and quantity. I was not aware that this fact had been noted by any previous writer, until looking into M. Ricord's work within the last few days, I find that the same circumstance is recorded as the result of his experience(*a*). The separation of the walls of the vagina, by means of a plug of lint, will assist materially in the cure of the disease. Counter-irritation, through the medium of blisters to the sacrum, and the actual cautery, as first recommended by Dr. Corrigan in sciatica, and successfully employed in some cases of leucorrhœa, will prove valuable adjuvants in protracted cases. From the frequent participation of the uterus in the disease, injections of the nitrates of mercury and silver have been respectively recommended to be thrown into the cavity of that organ: this is a mode of treatment, however, which, I confess, timidity prevented me resorting to, I shall, therefore, transcribe a passage from M. Ricord's work, bearing upon this particular part of the subject: "Wearied," he says, "with the protracted continuance of certain uterine discharges, I made some attempt to cure them. I first used an injection of one part of nitrate of mercury and eight of water. Some patients had very violent hysterical attacks; one of them had a cerebral congestion, which caused a momentary apprehension of apoplexy. These symptoms, which all arose a few minutes after the injections, yielded

(*a*) Ricord, p. 328.

very rapidly to antispasmodics; and in the case with cerebral congestion, on a quantity of blood being taken from the arm. Although the affections submitted to this treatment were either cured or partially so, I was obliged to reduce the doses, to avoid the serious consequences. I subsequently obtained some cures with one part of nitrate of mercury to twelve of water, without producing the symptoms I before mentioned; but yet the action of these injections was not always unattended with pain, or some nervous reaction of an hysterical character. I then substituted six grains of nitrate of silver to the ounce of water, and found that in some instances a chronic purulent uterine discharge was cured after two or three injections."(*a*) In order to guard against the danger attending the indiscriminate use of injections into the cavity of the uterus, Dr. Evory Kennedy observes: "We have been in the habit of using injections freely into the uterus for some years without any inconvenience, until we observed a case published in one of the periodicals about nine years ago, in which this operation was reported to have been followed by fatal peritonitis, in consequence of the injected fluid escaping into the abdominal cavity through the Fallopian tube; since then we have adopted this practice less frequently, and with such precautions as to prevent the possibility of any mischief of this kind occurring. By means of a long, graduated glass syringe, a quantity of fluid, not exceeding twenty minims, can be thrown into the cavity of the uterus, and its escape secured in the following manner:—the syringe attached accurately to a small, male, gum-elastic catheter, is fitted into a somewhat shorter catheter or tube, open and well finished at its extremity; the difference in caliber between the catheters being such, that the large catheter admits of the regurgitation of the fluid between it and the smaller. The syringe and inner catheter are first charged with the fluid to the point, leaving the piston so far withdrawn

(*a*) Page 327.

as to allow merely twenty minims, or half a drachm, in addition to the charging of the tube within the cylinder of the syringe, as proved by the graduated mark on its side. The patient is now placed in the recumbent posture, the tube introduced, the inner catheter (graduated also, so as to indicate when it projects beyond the other) is passed through, and the fluid slowly projected into the cavity of the uterus. After resting there as long as we wish, the piston may be drawn up, so as to suck any remaining portion of the fluid, and a little water thrown in, in the same manner, if required, or the larger tube allowed to remain, so as to secure the escape of any remaining fluid."(*a*).

As a substitute for injections into the uterus, I was frequently in the habit of introducing through the os a finely pointed pencil of nitrate of silver, and allowing it to remain in contact with the lining membrane of the uterus for a minute or two; this usually caused a momentary sensation of pain, but was attended with no ulterior ill effects. To guard against the danger that might arise from the breaking of the caustic, and it remaining in the cavity of the uterus, Dr. Kennedy suggests the propriety of melting it into a *porte caustique*, in the manner recommended by Mr. Wilde in the treatment of disease of the meatus auditorius and tympanum.

Conjointly with the topical applications described, I have found preparations of steel, more particularly the compound iron mixture, very efficacious in restoring the uterus to its original healthy condition.

(*a*) On Affections of the Uterus, Dublin Quarterly Journal, Feb. 1847.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. *Observations on the Prevention of contagious Diseases, by the effectual Ventilation of the Houses of the lower Classes.* By Robert Collins, M.D., M. R. D. S., President of the King and Queen's College of Physicians in Ireland, &c. Dublin, Hodges and Smith. 1848. 8vo. Pamphlet, pp. 20.
2. *A supplementary Report on the Results of a special Inquiry into the Practice of Interments in Towns, made at the Request of Her Majesty's principal Secretary of State for the Home Department.* By Edwin Chadwick, Esq., Barrister at Law. (Presented to both Houses of Parliament, by Command of Her Majesty.) London, Clowes and Sons. 1843. 8vo. pp. 279.
3. *First and Second Reports of the Commissioners appointed to inquire whether any and what special Means may be requisite for the Improvement of the Health of the Metropolis.* (Presented to both Houses of Parliament, by Command of Her Majesty.) London, Clowes and Sons. 1848. 4to. pp. 35.
4. *Unhealthiness of London, and the Necessity of remedial Measures; being a Lecture delivered at the Western and Eastern Literary and Scientific Institutions, Leicester-square and Hackney-road.* By Hector Gavin, M.D., F. R.C.S.E., &c. London, Churchill. 1847. 8vo. pp. 70.
5. *Sanitary Reform, and Agricultural Improvement; or how to promote Health and Abundance. In three Letters: Letter I. Drainage, Sewerage, Urinaria, and Cloacæ.* By Charles F. Ellerman, Esq., &c. London, Peirce and Hyde. 1848. 8vo. pp. 70.
6. *Journal of Public Health and Monthly Record of Sanitary Improvement.* Edited by John Sutherland, M. D. London, Renshaw. Number I. 1847. Large 8vo. pp. 30.

The vast importance of improving the structural arrangements of towns is now so generally acknowledged by all who have

directed their attention to the subject, that we need not apologize for devoting some of our space to this interesting inquiry; and, for the same reason, we have the less hesitation in fully canvassing the arguments which have been brought forward from various sources in support of the necessity of this improvement. In the commencement of every attempt to ameliorate the evils to which humanity is liable, much allowance should be made for exaggerated statements; and, so as the end sought to be attained is manifestly good, the reasoning employed in its promotion need not be too severely scrutinized. This was especially felt to be the case with regard to the efforts made by some few earnest and energetic advocates for cleanliness, ventilation, and sufficient supply of water to the habitations of the poor; and, up to a late period, the bulk of the medical profession, admiring the philanthropy and energy of the apostles of the sanitary cause, passed over in silence many doctrines to which it could not conscientiously subscribe, and permitted judgment to go by default in cases where the admitted rules of medical evidence were relentlessly violated. This state of things need not, however, any longer continue. The sanitary question is no longer in jeopardy from lukewarmness or malevolence. The influential and enlightened classes of society are fully alive as to its extreme importance to the welfare of the community. The Press aids in the struggle for improvement; and there is now no reason why the most intricate and difficult questions which are involved in the consideration of this subject should not receive the strictest investigation. Vested interests may oppose, ignorant prejudices may retard, but in the ultimate triumph of truth and science we have the most implicit faith.

The first work enumerated in the heading of this review is the substance of an address read by Dr. Collins at the Evening Meeting of the College of Physicians on the 7th of February last, when the Lord Lieutenant honoured the College with his presence. The main object of this pamphlet is to show that all external sanitary improvements are inefficacious unless there be a ready exit for the impure air from within. In the course of his address Dr. Collins remarked upon the great mortality of medical men in the rural districts, and in general in Ireland, from disease contracted in the discharge of their perilous duties, particularly in the last year; and says: "It is abundantly obvious, from the disastrous fatalities to medical men in the rural districts, that it matters not how pure the air external to our dwellings may be, there is not the slightest safety in this, if the vitiated air be not removed from the inte-

rior." At the same time we know that a vast number of medical men contracted fatal fever from attendance upon the sheds and temporary hospitals throughout the country.

We shall now proceed to detail, from the papers before us, the present state of the sanitary question, commenting, as we procced, on those opinions and recommendations which we consider to be based on erroneous principles, and pointing out the path which we believe to be best calculated to lead to the attainment of public utility.

Nothing can be better proved than that the emanations proceeding from putrefying organic matter are injurious to animal health, and conducive to the production of disease. The greater mortality of an urban than of a rural population demonstrates this fact on a scale of such magnitude as to render unnecessary any minor and merely corroborative evidence for its verification. From a table contained in the Report upon Tables of Deaths in the last Irish Census, we find that in towns where the population is between 2000 and 5000, one person out of 45·9 dies annually; in towns which contain from 5000 to 10,000 inhabitants, the mortality is 1 out of 39·89; in towns of above 10,000 inhabitants, it is 1 out of 37·64; while in the open country it is only 1 out of 74·06: in other words, an individual has twice as great a chance of life in the open country as in a thickly populated town(*a*). The great majority of the inhabitants of towns are quite ignorant of this excessive mortality;—nay, even the members of the municipality of more than ordinarily enlightened towns are very commonly in a similar predicament. A good opportunity of witnessing this want of information on a matter of such importance was afforded us, some months since, in the comparatively wealthy and flourishing city of Waterford. Professor Aldridge having been requested to deliver a course of lectures in that city, took occasion to offer some remarks on the sanitary condition of the town. As a proof of the influence of defective structural arrangements on the health of the population, he showed from the Census returns that the mortality in the county of Waterford is 1 in 68; whilst that in the city is 1 in 34, or exactly double the former. At this lecture the Mayor was in the chair, and many of the most intelligent of the Corporation and citizens were present. After the lecture several speeches were made; through courtesy, no absolute contradiction was given to the statement of the lecturer, but much astonishment was expressed; all agreed

(*a*) Census of Ireland for 1841.—Report upon the Tables of Deaths, by William Robert Wilde, Esq. Dublin, August, 1843.

in considering Waterford, until the late pestilence, to have been a very healthy city; and it was quite plain that the majority felt doubts as to the correctness of the figures which had been brought forward. Now until the majority of the inhabitants of towns become thoroughly educated in the consequences of defective structural arrangements, it is useless to hope for a true sanitary reform. Every proper means should be adopted for the purpose of extending this education, and we are therefore well pleased to see the Journal of Public Health, whose title is amongst the works enumerated at the head of this article.

It being admitted to be a fact that the mortality of towns is much greater than that of the open country, there can be no question that the principal cause of this difference is the accumulation in towns of fermenting organic, and particularly animal matters. All the means proposed, and experimentally approved, for rendering more salubrious urban localities, act by removing or diluting the poisonous emanations which are engendered by putrefaction. An abundant supply of water, good scavengerage and sewerage, free ventilation, all operate in one or other of these ways. Certain occupations may tend to increase the mortality of towns; one locality may be naturally more unhealthy than another; the habits of life may differ;—but can any one or all of these causes suffice to explain why it is that in the town of Galway, with only a population of 17,000, 1 out of every 27 die yearly; while in the city of Cork, with 80,000, the mortality is but 1 in 40? The only way to account for the difference is by the filthy and neglected condition of the former town; or that while the average age at which death occurs is 9 in Belfast, 8 in Limerick, and even as low as 6 in Drogheda, it is 28 in the rural districts of Kilkenny, and 30 in the County of Wexford.

This argument is in itself so strong that we require no other. We think that the advocates for sanitary reform weaken their cause by having recourse to doubtful or speculative opinions, when they have such facts as these to rely on. We do not hesitate to say that the greater number of medical men who have taken part in the movement for sanitary improvement, have tended to bring the subject into disrepute with the well-informed of their profession, by the manner in which they have dogmatized on *questiones vexatas*, and the one-sided earnestness they have displayed, rather as advocates than impartial inquirers. Thus Dr. Southwood Smith says:

"It is equally well known that, when the air is infected by par-

ticles of decomposing vegetable and animal matter, fevers are produced, of various types and different degrees of intensity."

Now is there a question in the whole history of medicine more completely *sub judice* than this very one, so summarily disposed of by Dr. Smith? Again, Dr. Lyon Playfair states:

"To take the simplest case: a piece of decayed wood, a decaying orange, or a piece of tainted flesh, is capable of causing similar decay or putrefaction in another piece of wood, orange, or flesh. In a similar manner the decaying gases evolved from sewers occasion the putrescence of meat or of vegetables hung in the vicinity of the place from which they escape. But this communication of putrefaction is not confined to dead matter. When tainted meat or putrescent blood-puddings are taken as food, their state of putrefaction is frequently communicated to the bodies of the persons who have used them as food. A disease analogous to the rot ensues, and generally terminates fatally. The decay or putrefaction communicated by putrid gases or by decaying matters does not always assume one form, but varies according to the organs to which their peculiar state is imparted. If communicated to the blood it might possibly happen that fever may arise; if to the intestines, dysentery or diarrhœa might result; and I think it might even be a question worthy of consideration, whether consumption may not arise from such exposure?"

In the foregoing extract Dr. Playfair employs an ingenious speculation of Liebig's as to the analogy of fermentation to the phenomena of malaria and infection, as if it was a demonstrated and accepted truth. Now the fact is, that, whatever our individual opinions may be, this hypothesis of Liebig's is regarded by the majority of fever physicians as wild and untenable. Dr. Copland, in his evidence before a Committee of the House of Commons, says:

"About two years ago I was called, in the course of my profession, to see a gentleman advanced in life, well known to many members in this house, and intimately known to the Speaker. This gentleman one Sunday went into a dissenting chapel, where the principal part of the hearers, as they died, were buried in the ground or vaults underneath. I was called to him on Tuesday evening, and I found him labouring under symptoms of malignant fever. Either on that visit or the visit immediately following, on questioning him on the circumstances which could have given rise to this very malignant form of fever,—for it was then so malignant that its fatal issue was evident,—he said that he had gone on the Sunday before (this being on the Tuesday afternoon) to this dissenting chapel, and on going up the steps to the chapel he felt a rush of foul air issuing from the grated openings existing on each side of the steps: the

effect upon him was instantaneous; it produced a feeling of sinking, with nausea, and so great debility, that he scarcely could get into the chapel. He remained a short time, and, finding this feeling increase, he went out, went home, was obliged to go to bed, and there he remained. When I saw him he had, up to the time of my ascertaining the origin of his complaint, slept with his wife: he died eight days afterwards. His wife caught the disease, and died in eight days also, having experienced the same symptoms."

Now we confess that we look on this story, under the circumstances in which it was told, as anything but conclusive. If it be assumed as proved that putrefying exhalations can instantly give rise to specific disease in an organism exposed to their action, such an anecdote might be related to a medical class, or in a medical essay, as an illustration of the deadliness of their effects: even so, exception might be taken to it on the ground that the patient might have had the fever on him at the time that he perceived the unpleasant odour, the senses being commonly, under such circumstances, unusually acute, and that we cannot take the belief of a patient as a sufficient evidence of the cause of his disease; or it might be that there was no truth in the story, it being, perhaps, the raving of delirium; for we lately knew an instance where an incoherency of speech was the first symptom of incipient fever. But to bring such a story as this before a Committee of the House of Commons, as a *proof* of the injurious influence of putrefaction within cities, appears to us to be most illogical and absurd. The quotations which we have taken from the evidence of men who have acquired some reputation in the profession may be taken as examples, somewhat above the average, of the kind of support which medical men in general have given to the cause of sanitary reform. We wish it had been otherwise, but we feel ourselves justified in the statement, that such support is rather calculated to injure than serve the principles which it advocates.

We have already stated the grounds upon which we are led to believe that accumulated and decomposing organic matter is the cause of the comparative unhealthiness and increased mortality of towns. It comes to be a question of importance, what are the constituents of putrefactive effluvia that thus prove injurious? The gaseous products of animal effluvia are chiefly: watery vapour, carbonic acid, ammonia, sulphuretted hydrogen, phosphuretted hydrogen, carburetted hydrogen, organic matter in a gaseous and decomposing state.

When we come to examine these different principles, we cannot ascribe the effects produced by the vicinity of animal

matter in a state of putrefaction, to any of the inorganic products above enumerated. What are these effects? We will tell them, as far as our experience enables us. Almost all medical students, when they commence to dissect, and have overcome the repugnance occasioned by the disgusting nature of their employment, at first are sensible of a remarkable increase of appetite, and subsequently become attacked with diarrhœa. Again, at autopsies, we have frequently had to plunge the scalpel into the abdominal cavity of a body much distended from the gaseous results of putrefaction, and it has sometimes happened that we or others have felt nausea, faintness, weakness, and been subsequently tormented with headach. We cannot say how much of these effects were due to disgust at the nature of our occupation,—how much to the injurious influence of the gases disengaged; and we do think that the mere sensation of an extremely unpleasant odour would be sufficient to account for those symptoms, without the supposition of any poisonous action. Lastly, we have satisfied ourselves that the greater number of hospital cases come from the filthiest localities. This was remarkably the case during the investigations in Waterford already referred to. In St. John's-street, in that city, every second hall leads into a confined close behind the houses, in each of which are a number of miserable tenements; and the area of nearly every close was at the time of our visit loaded with every kind of unutterable nastiness. Our conductor, a very intelligent clergyman, who was a member of the Relief Committee, told us that a majority of sick cases of all kinds were sent out of these closes to hospital. We may remark that great efforts were made on the part of the authorities to keep these closes clean, but were frustrated by the want of proper structural arrangements.

Now comes the question, does neglect of cleanliness lead to any specific disease, or does it increase the general sum of disease, without reference to any one in particular? We are led to believe that the latter is the truth. We have heard the last year of a vast number of medical men dying of fever; yet the number that were cut off by this disease would give a very false idea of the real mortality. In ordinary years between 2 and 3 per cent. of the medical population of Ireland die; this year, when fever raged like a plague, between 6 and 7 per cent. of the medical men of Ireland have died, according to Drs. Cusack's and Stokes's researches; and yet, in both cases, the deaths by fever have been between 44 and 45 per cent. of

the entire number of deaths. If there has been in 1847 an unusual number of deaths from fever, so there has been a proportionately unusual number of deaths from all other causes. Peculiarly exposed to contagion, medical men are nearly twice as liable to fever as all other classes put together; but that which rendered them more susceptible of fever in the past year also rendered them more susceptible of all other forms of disease. Over-worked, ill-paid, and treated with contumely by those who ought to have acted as their friends, is it any wonder that they should have been predisposed to the reception of any injurious influence which might be brought to bear on them? Now just in the same way that the causes to which we have alluded have predisposed medical men, not to this or that, but to all varieties of disease, do we conceive that want of cleanliness, and the consequent diffusion, through the atmosphere of cities, of noxious and putrescent gases, induce a predisposition to incur any of those vital aberrations which conduct to mortality. Here, then, we have three groups of effects produced by exposure to the emanations of putrefying animal matter: firstly, symptoms of gastro-intestinal irritation; secondly, symptoms indicating a nervous shock; and thirdly, a condition of general ill-health predisposing to the contraction of disease.

Now to which of the constituents of the gaseous emanations of putrefaction are we to attribute the symptoms to which they give rise. Not, assuredly, to the ammonia, carburetted hydrogen, or carbonic acid; for the known effects of these gases on the system are very different from those produced by the vicinity of animal putrefaction. Perhaps the ammonia may have something to do with the enteric irritation to which dissecting students are prone; but if sufficiently concentrated for that purpose, we should expect it to cause ophthalmia and bronchitis, diseases to which we do not know that medical students are peculiarly liable. Carbonic acid contained in an atmosphere in considerable excess is capable of producing syncope; in still greater quantity, asphyxia; but in the proportion in which it is evolved during putrefaction, we are not aware of its causing any physiological phenomena. Malsters, brewers, and tanners breathe an atmosphere containing a much greater quantity of carbonic acid than what is likely to be present in any air contaminated by the results of putrefaction, and we are not aware of their suffering from the symptoms which originate from putrid emanations. Colliers breathe an air surcharged with the carburets of hydrogen, yet the diseases to which they are subject cannot be ascribed to this cause. It is, therefore, to

the sulphuretted hydrogen, phosphuretted hydrogen, and decomposing organic miasma, we are to look for an explanation of the ill effects which decomposing organic matters produce on the health of a population. Of these three it is probable that the sulphuretted hydrogen is least injurious; this, at least, is certain, that a person may breathe an atmosphere rendered most offensive by this gas, and that for many hours daily, without experiencing any ill effects. We are in the habit of frequently spending several hours in a laboratory, where sulphuretted hydrogen is evolved in quantity sufficient to annoy the surrounding neighbourhood, without either ourselves or assistants suffering in health therefrom. No doubt, this gas is a powerful poison when inhaled in a concentrated form; but like many other poisons, it seems to lose its energy by dilution. We have suffered much more from the inhalation of phosphuretted hydrogen; and have rarely prepared the latter gas in any quantity without getting headach, and suffering for some time after from a feeling of oppression. The whole of the effects produced by exposure to putrid emanations cannot be accounted for, however, by the known effects of any of the definite products of putrefaction. It is very unlikely, indeed, that a person suddenly exposed to an atmosphere containing the proportions of sulphuretted, carburetted, or phosphuretted hydrogen, ammonia, or carbonic acid, either singly or together, contained in the most concentrated putrid exhalations, even such as escape on the bursting of a putrid corpse, should be attacked by a syncope, followed by symptoms of such severity as there is reason to believe frequently result from sudden contact with putrid exhalations. There are residual phenomena to be accounted for, namely, those symptoms in excess over what the various acids and bases evolved during putrefaction are known to be capable of producing. M. Duvergie states that he and M. Piedagnel were present at a disinterment conducted with considerable precautions, and yet they were both seized with illness, and M. Piedagnel was subsequently confined to the house for six weeks. Now a continuous illness of this kind could scarcely be ascribed to the inhalation of sulphuretted hydrogen or carbonic acid, the known effects of which are sudden and transient. It is, therefore, generally agreed to attribute these surplus effects of putrefactive emanations to the influence of a decomposing organic matter, which the experiments of Liebig and others have demonstrated to exist in such atmospheres. The condensed dew obtained from the air of marshes and of churchyards has been found to become turbid upon keeping, and to deposit a brown

sediment. This dew is precipitable by a solution of nitrate of silver, and darkened by concentrated sulphuric acid. These reactions show that organic matter in a state of change is contained in these atmospheres. To this organic matter physicians are in the habit of attributing certain of the poisonous effects of putrefactive exhalation; but it must be remembered that all such explanations are as yet hypothetical.

All the products of the putrefactive process are not odorous. Carbonic acid—which, in a concentrated form, is as poisonous as sulphuretted hydrogen—has no odour. The decomposing organic matter contained in the gaseous products of putrefaction, and to which such baneful effects are commonly attributed, cannot be detected by the smell. Yet it has been asserted that, if the gaseous products of putrefaction be deprived of odour, this is an evidence of their being no longer injurious to health; or, to use the jargon of the day, "if they be de-odorised, they are also disinfected." Mr. Chadwick, who has been in general very cautious in his generalizations, says: "All my experience, and all my information, go to vindicate the integrity of the nose,—that if you did not smell it" (sewerage) "at any place, there would be no injury from it; and if you did, there would." As might be expected, Mr. Ellerman goes much farther. He treats us to the following beautiful piece of reasoning:

> "If it be true that the sense of smell with which an all-wise Providence has endowed us, is given, among other purposes, in order to warn us against miasmatic exhalations; and if it be also true that aught which depresses the human system predisposes it to contract disease, and that powerful odours have this depressing effect in a large degree (facts which have never been disputed);—I am at a loss to discover upon what grounds it can for a single moment be reasonably contended that deodorants are not necessarily disinfectants."

There is much virtue in an *if*, but we are not inclined to give Mr. Ellerman the whole benefit of it on the present occasion. We may be permitted to ask, *if* the sense of smell be given to warn us of miasmatic exhalations, why does it not warn us of other poisons; yet the odour of prussic acid is not usually considered disagreeable, and carbonic acid has no odour at all? If the sense of smell has this protective influence, why should not the sense of taste similarly guard us; yet both white arsenic and sugar of lead are rather sweetish than otherwise? There is, in truth, no such law as that laid down by Mr. Ellerman; and then as to all powerful odours having a depressing influence, any old woman could have told him that sal volatile

and spirits of hartshorn are used with the very opposite purpose.

"In reference to measures of alleviation and prevention," say the Metropolitan Sanitary Commissioners, "we have received evidence as to the effects of solutions of the chloride of zinc, of the nitrate of lead, and other substances intended to decompose noxious gases. The evidence on this subject will be found to be of scientific interest, though it is to some extent conflicting, and the conclusions undetermined. Dr. Lyon Playfair, Professor Graham, Professor Hoffman, and Mr. Cooper, concur in attributing disinfectant properties to chlorine and certain acid gases, in the case of typhoid fevers, but not in cholera; but they deny to nitrate of lead, and other so-called disinfectant salts, or any similar substances, the possession of qualities to effect more than to deodorize decomposing animal or vegetable substances. Dr. Lyon Playfair affirms, with respect to chlorine, that he has had abundant proofs of its power of diminishing and mitigating infection in the case of typhoid fever: it destroys all decaying emanations. Dr. Leeson and Mr. Grainger, on the other hand, consider that the disinfectant salts have more powerful and more valuable properties for decomposing the noxious gases. One of our colleagues also has used the nitrate of lead extensively in the London Fever Hospital, during the late extraordinary prevalence of fever, and from his observation of its effects he is of opinion that it has apparently assisted in maintaining the purity of the air."

So to this meagre opinion have dwindled all the barefaced quackery which we had occasion to expose in our Seventh Number. "Our colleague," say the Commissioners, told Lord Morpeth, in July last, that "his Lordship had in his own hands, and had had for some months, the sure and certain means of preventing the extension of fever to the immediate attendants on the sick;" and "that, by means of this agent (the nitrate of lead) medical men, who are always in imminent danger, and who so often suffer, might perform their arduous duties with perfect security."

Well, it was to be expected that the man who would be capable of penning such arrogant and unfounded assertions would continue blindly and obstinately to cling to his superstition. And we are, therefore, not surprised to learn, that, in spite of the *exposé* which we were compelled to make in the Number of this Journal for August last, and in spite of the damning fact that the misguided individual who was the chief promoter of the imposition, has since sealed, by his own death from malignant typhus, the futility of the pretended disinfectant powers of nitrate of lead,—we repeat that we are not surprised to learn that Dr. Southwood Smith and Mr. Grainger still con-

tinue feebly to advocate the disinfectant powers of nitrate of lead. But it is satisfactory to us to find that such men as Dr. Lyon Playfair, Professor Graham, Professor Hoffman, and Mr. Cooper,—in fact, all who have followed us in the consideration of the subject,—have entertained sentiments analogous to our own.

But it is not true that nitrate of lead or chloride of zinc possess deodorizing powers. It is quite true, and is long known, that if a metallic solution be added to a solution of hydrosulphuret of ammonia in sufficient quantity, it will destroy the odour of the latter; but this single instance of chemical action does not entitle the metallic solution to be called a deodorizing agent. Any one who may have fallen into the fallacy of drawing a general deduction from a particular instance, will find cause to correct his opinions, if he perform the simple experiment of leaving some milk in an open vessel until it smells strongly of hydrosulphuret of ammonia, and then adding an equal bulk of a concentrated solution of nitrate of lead. The odour before the addition of the salt, already sufficiently offensive, will be found subsequently still more disgusting; for the smell of hydrosulphuret of ammonia, bad as it is, is not by any means so odious and sickening as that of the phosphuretted hydrogen, which, by the destruction of the former, is left to act alone upon the sense.

Taking these deodorizing agents at their true value, and seeing that they do not destroy the worst of those gaseous emanations from putrefying substances which predispose to disease, nor even render latent the most disagreeable odours, we are led to think that their consideration ought to be neglected in any legislative enactment for remedying the present sanitary condition of large towns. It is the more necessary to limit the proposed means of sanitary improvement, inasmuch as those means must necessarily entail a considerable outlay, to which every ineffectual or doubtful expedient must add an increase, and thus retard and postpone the measures which it is agreed would be salutary and practicable.

Let us now turn our attention to the latter class of measures; and if it be admitted that the great excess of mortality in towns over that in the open country is due to the proximity of decomposing animal substances, a position to which we think an exception cannot be taken, there will be no difficulty in determining the means which ought to be had recourse to. In the first place, all the great foci of putrefaction ought to be removed from the proximity of a dense population. No churchyards, slaughter-houses, or other receptacles of a like nature,

should be permitted in towns. This is a principle so self-evident, that, however difficult it may be to make its importance popularly understood, we do not think it necessary to insist on it in an article like the present.

The question of drainage is a more difficult one. It is primarily this: ought the Government of a country to permit the manure generated in the cities to go to waste, or to cause it to be economized? In order to answer this question we should be enabled to tell the value of this manure to the agriculturist, and to be enabled to balance this value against the expenses of the necessary structural arrangements for its collection, as well as those for its transit. We were lately told by a gentleman who has taken a very active part in sanitary reform, that he did not think that it was intended by Providence that the manure generated in cities should be economized for the benefit of existing generations; but that its use was destined for the countries which were, by and by, to rise out of the seas. We confess that we are not sufficiently interested for posterity to put any importance on this view of the subject. We shall feel quite content if it be shown at all possible to convert this enormous quantity of valuable manure into real benefit to the inhabitants of the existing countries of the earth.

One thing is quite evident, that if all the rain-water which falls in cities, together with that of all the tributary streams that flow into their rivers, with the water used for flushing the ordinary sewers, and for other purposes, be permitted to mix with the real manure, there will not be any economy in saving the latter, for it will become so diluted as to be actually good for nothing. This is not the way in which the Chinese utilize this manure; it is not by mixing it with an enormous quantity of water, but by drying and pulverizing it. If there be no way of collecting the manure of cities except by the formation of vast cess-lakes in their vicinity, we say that it would be far preferable to let all this manure run into the sea, and be for ever lost. But we do not see why this should be so. We cannot comprehend why that which is practicable in Edinburgh should not be practicable in London or Dublin. If a sufficiently stringent police law was in operation, and the duty of seeing that the night-soil of every house was diurnally collected and appropriately bestowed for agricultural purposes was committed to the police, under the supervision of a paid magistracy, we feel convinced that all the benefits already obtained in the metropolis of Scotland could be gained in those of England and Ireland.

With respect to scavenging and sewerage, our experience is, that if scavenging be regular and particular, it is far better than an imperfect sewerage. We were much struck with the truth of this in Waterford. Lady-lane, in that ancient city, is one of the most respectable localities. It is an exceedingly narrow lane, with fine and lofty houses on both sides. The fall for surface drainage is comparatively trifling, and it has no sewer, yet the atmosphere is far sweeter than in similar parts of the city where there are sewers. In fact a sewer, unless it be flushed and trapped, is a nuisance ; it is a retort, vomiting back the undigested fumes of putrefaction. We say this with respect to all sewers, even when constructed on the most scientific principles, although we acknowledge, from experience, that those of Holborn and Finsbury are less liable to the charge than the usual flat-bottomed ones that are still being constructed in the majority of districts.

Dr. Collins's plan of ventilation is intended simply as being applicable to the dwellings of the poor. It consists in having apertures in the upper and lower parts of each room, through each of which a short tube passes, which is divided by a diaphragm of perforated zinc, and in very cold weather the tube may be completely closed by a wooden stopper. This arrangement is probably as easily capable of application as any other that has been proposed ; but before it, or any other mode of ventilation, will be adopted, it is obvious that the people must be instructed as to its utility. We may mention that we were informed by Mr. J. Grubb, of Clonmel, who has paid much attention to the subject, that the perforated zinc plates are very apt to become choked by dirt in a short time.

This article having exceeded the limits which we had originally allotted to it, we cannot at present enter more particularly into the discussion of proposed structural improvements, and we shall therefore conclude by laying before our readers the deductions arrived at by the Sanitary Commissioners as to the nature and progress of the cholera, which is hourly approaching these islands. These deductions are as follows:

" That the disease (cholera) as it has recently appeared in Persia, in Trebizond, and in Russia, is unchanged in its general character, and that it is at the present time, according to the latest information, in a similar position to that in which it was in 1831, when its progress was arrested by the frost, previously to its advance upon Europe immediately after the thaw took place.

" That the more recent experience in Russia has led to the general abandonment of the theory of its propagation by contagion ; a

conclusion in which, after a full consideration of the evidence presented to us, we fully concur.

"That the views which we adopted in relation to the inexpediency of special cholera hospitals, except in cases of peculiar necessity, have been confirmed by the coincident adoption of the same conclusions in Russia.

"That we have received much information tending to establish the conclusion that cholera is not the sudden disease which has hitherto been supposed; that the commonly known form of the malady is, in reality, its second stage; and that its first stage is manifested by the premonitory symptom of diarrhœa, which is commonly unattended to, but which, if met by the strict observance of proper regimen, and by appropriate medicine, may be arrested before passing into the more violent and fatal stage of the disease."

The foregoing are the most important conclusions to which the Commissioners have arrived; they are entitled to serious consideration. Although we may not coincide with them in every particular, we think that the fact is sufficiently established, that it is not by a *cordon sanitaire* and strict segregation that the approach of cholera can be withstood, or its spread prevented. Like all other epidemics, its greatest enemies are ventilation, cleanliness, and drainage.

We cannot terminate this article without again urging on our readers the importance of the subject. Nearly twice as many die in cities as in the open country; the duration of life is little more than one-half in the former to what it is in the latter. Can nothing be done to check this enormous mortality? We know the cause of this mortality. It is produced by the effluvia of organic putrefaction, permitted to accumulate by our burying our dead(*a*) and slaughtering the animals which we use for food in the immediate vicinity of our dwellings; and still more fatally by our remaining exposed to the decomposing products of the waste of the living, preventing the dilution and diffusion of that waste by parsimony of air, and water, and space; and if we do construct arrangements for the removing of that waste, constructing them in such a manner that, as in the instance of common sewers, they serve as receptacles where poison becomes brewed, to be eventually spewed out through gully-holes and vents of every kind,

(*a*) Dublin has been much improved during the last ten years in this respect. The establishment of three large cemeteries at a considerable distance from the city had reduced the burials within the municipal boundaries to about a fifth of the previous amount in 1841. From Mr. Wilde's investigations it appears that for the two years ending 6th June, 1841, the burials were: outside the city, 10,750, and in the eighteen grave-yards within the municipal boundery but 2766.

in the midst of the living crowd. We know all this, and we spend our time calculating remedial schemes, which would require centuries to complete, and millions sterling to execute, while we neglect the simplest and most obvious methods of prevention. If we have occasionally, in the course of this article, spoken lightly of proposed sanitary improvements, it is because we consider sanitary reform to be really the most important social question of the age, and we should not wish its progress to be retarded by false philosophy or meretricious ornament.

A Dictionary of Practical Medicine, comprising General Pathology, the Nature and Treatment of Diseases, Morbid Structures, &c. By JAMES COPLAND, M. D., F. R. S. Parts XI. and XII. London, Longmans. 1847 and 1848.

FIFTEEN years have now elapsed since Dr. Copland published the First Part of his stupendous work on Practical Medicine. With the issue of the Fourth Part, in 1836, he appended to his Prospectus a paragraph stating that the work would be completed in five or six Parts, and in the course of a few months from that date. Notwithstanding that pledge to his subscribers, the Parts have now extended to four whole and eight half Parts; the *few* months to *fifty-two;* and the letter P is not yet completed.

We are not, however, at present about to reiterate the oft-repeated accusations of broken faith with which the weekly Medical Journals have abounded for many years, and to which Dr. Copland has turned the adder's ear; but we wish to hold up his case as an example to authors of every class, to deter them from going to Press, more particularly if about to publish in Numbers or Parts, until the entire, or, at least, the greater part of their intended work, is in manuscript. Independently of the injury which "hope deferred" must have on the mere sale of a book, there are far weightier and much more important reasons for the soundness of this rule. The chief of these respects the fame of the author: a book published, as Dr. Copland's has been, in Numbers, at such long intervals, must, of necessity, be very unequal, both as regards the writer's style and the discoveries of his contemporaries. We thus find that some of the articles contained in the earlier Parts of this Dictionary are far behind the pathology, physiology, and practice of the present day; and yet they form part and parcel of the same book with the Number just published. The author, also, becoming at length callous to complaints, spins out the various subjects

proper to his work to an unconscionable length,—an accusation to which for many years Dr. Copland has been peculiarly open, —nay, even introduces some subjects altogether foreign to the scope of his undertaking. Of this latter charge, Part XII., the last published, is a remarkable example. It contains 144 pages, of which *twenty-four* are devoted to the completion of diseases of the pleura, commenced in the Eleventh Part, and the remaining 120 to a disquisition on poisons, not yet completed. We cannot understand on what grounds Dr. Copland introduces an essay on toxicology into his Dictionary; a subject he admits his limited space must of necessity render incomplete; one, too, which could not be done justice to by any individual who had not devoted years of labour and observation to its practical study; and a subject, moreover, on which the medical witness will not look for information in Dr. Copland's Dictionary of Practical Medicine, with such works as those of Christison and Taylor in the English language. We feel, then, compelled to raise our voice against this mal-appropriation of space and time, and public indulgence, hitherto so liberally granted; and we at length begin to fear that Dr. Copland's work is, for many years to come, likely to prove a Tantalus' cup to the medical profession.

The Eleventh Part commences with the continuation of the article on yellow fever, or, as the author has termed it, hæmagastric pestilence. It is an excellent compilation, derived from most of the ancient and modern writers on this disease, but might, considering the date of its publication, contain a more complete account of the recent epidemics described by several American physicians. Dr. Copland differs from those who consider that yellow fever is merely a variety of continued fever, an opinion which has obtained very general credence of late years, which is strongly insisted on by Dr. Graves, in the lecture on yellow fever in his Clinical Medicine, and which has received additional proof from the Scotch epidemic of 1843–44, as described by Dr. Cormack, Dr. Arrott, and others. He thinks that it is a special fever, or rather pestilence, to be classed with cholera and the plague; strongly insisting on its *individual* infectious nature, and the necessity of the adoption of sanitary regulations for the protection of the general community from its attacks.

Plague, which the author terms septic or glandular pestilence, is the next subject treated of; and we then have a chapter devoted to a disquisition on the means best calculated to prevent the spread of pestilential diseases, including a consideration of the quarantine laws, sanitary measures, and medi-

cinal prophylactics. It is an able and masterly review of the whole of this "*questio vexata*," the perusal of which, in its entire state, we strongly recommend to our readers, containing the communication of facts too valuable and too important to admit of either analysis or condensation.

Essays on phlegmasia dolens and pityriasis follow in alphabetical order; both of which are articles of average merit, not requiring any detailed notice. To the next subject, however, diseases of the pleura, we purpose to call the attention of our readers somewhat at length.

We have often been inclined to doubt the advantage of short nosological definitions of disease; they too frequently lead the mind of the student to a system of generalization, and thus prevent the special consideration of those minute symptoms on which differential diagnosis depends. It is, however, an ancient custom, and one, therefore, from which modern writers are loth to depart. Dr. Copland, throughout his Dictionary, has been careful to adhere strictly to it; and with all the aids at his command from the discoveries of modern medical science, we think that he has scarcely, if at all, in any instance, improved on Cullen. Take, for example, his nosological definition of pleurisy:

"Acute pain in the chest, aggravated by inspiration, commencing with chills or rigors, followed by increased heat, a hard and accelerated pulse, short dry cough, and by difficult, short, or disordered respiration."

But this may be pneumonia, pericarditis, inflammation of the peritonæal surface of the diaphragm, or splenitis! Of course, these symptoms are fully dilated on, and the differential diagnosis explained, in the substance of the essay; but the conciseness and apparent completeness of the definition, often tempts the student we fear to rest satisfied with the short road to learning thus *in limine* presented to him.

The structural changes which constitute pleurisy are but briefly noticed by Dr. Copland, as he previously described the morbid alterations of serous membranes under the head of "Peritonæum." He agrees in the view generally adopted, as to the diminution of the healthy serous exhalation in the first stage of inflammation of serous membranes, but limits its continuance to a very short period of time. That it does exist at all is, we think, very problematical; it has never been detected after death, even in the neighbourhood of those parts of the pleura which are coated with lymph, and where we ought to find it as indicating the spread of inflammatory action; and

we fully agree in the opinion expressed by Hasse, that "the so-called *pleurésies sèches* of Andral are probably to be understood in a comparative sense only,—effusion too scanty to be detected during life being counted as nothing compared with the amount contained in other cases."(*a*)

The author next passes in review the symptoms and signs of pleurisy. The acute pain, or stitch in the side, so characteristic of the disease, is, we agree with him in thinking, caused by the act of inspiration stretching the fibrous layer of the membrane, in its inflamed condition. We are thus enabled to understand why a deep inspiration should cause such an increase of pain as to be altogether insupportable, and compel the patient to emit an involuntary cry; and also why the pain is almost invariably ascribed to a spot below the nipple of the affected side, this being the part of the pleura which, during the act of inspiration, is most put on the stretch, corresponding as it does to the centre, or most prominent part, of the arch formed by the parietes of the thorax. It is generally remarked as a circumstance difficult to be accounted for, that in some pleuritic patients this pain is very slight, and in others scarcely, if at all, felt, while in most it is so acute as to be reckoned one of the most certain symptoms of the disease; but, knowing the great difference which exists as regards sensibility to pain amongst persons apparently of the same diathesis, and even of the same family, we have always ascribed this fact to *individuality of constitution*, which, as Andral has well proved, influences in a remarkable degree the character of the effusion in pleuritis.

In Cullen's definition of pleurisy, *decubitus* on the affected side is placed amongst the most prominent symptoms; so certain a sign was it, in his day, believed to be of pleuritic inflammation. Since, then, we find great discrepancy among writers on the disease, as to whether patients lie on the healthy or diseased side. Dr. Stokes states the rule to be, that, in the first stage, the decubitus is on the healthy, in the second, on the diseased side; and with this view Dr. Watson concurs. Drs. Bright and Addison state, as their opinion, that in pleurisy situated at the upper part of the chest the patient lies indifferently on either side, or on the back; but if it be situated very low down, he prefers lying on the side affected. Dr. Copland believes that the decubitus is most frequently on the back in the acute stage, sometimes on the sound, and rarely on the affected side; but that, after effusion has taken place, the patient

(*a*) Hasse's Pathological Anatomy, Sydenham Society's edition, p. 184.

can only lie on the back or the affected side. All, however, admit that there are many exceptions to the opinions they state. We agree with all as to the decubitus in the second stage being on the affected side, a position assumed by nature to allow the greatest possible amount of expansion to the healthy lung; but as regards the first stage, we have seen some patients lie on the affected, some on the healthy side, some on the back, and others, as remarked by Andral, on the back with a slight inclination to one side. We have, however, invariably remarked a connexion between the character of the pain and the decubitus; that is to say, those in whom pressure with the fingers over the intercostal spaces augmented the pain lay on the back or the healthy side, evidently with the view of relieving the painful parts from the pressure of their body; while those in whom such pressure did not augment the pain, as is frequently the case, lay on the affected side, as in this position there is the least mobility of that side of the thorax, and the inflamed pleura is thereby kept most at rest.

In his analysis of the physical signs of pleurisy, we do not find that Dr. Copland has added anything to our previous knowledge on the subject. He altogether misapprehends Dr. Stokes in stating that he agrees with M. Reynaud as to the friction sound being due to a defective lubrication of the opposite pleural surfaces during the early or incipient stage of inflammation. Dr. Stokes is of opinion,—we use his own words(*a*),—that in inflammation of the pleura, pericardium, and peritonæum, the friction signs are caused by the existence of unorganized lymph on the surface of the serous membrane. And with this opinion we fully agree, for how could the mere absence of moisture on the opposed surfaces of a perfectly smooth, soft membrane give rise to the peculiar, creaking, friction sound we hear during the gentle gliding motion caused by expiration and inspiration, and this motion, too, so much diminished in pleurisy.

In speaking of *latent* pleurisy, our author states, that one cause why the disease may be latent arises from the pain felt being referred to some part remote from the thorax; as, for example, in three cases which he lately witnessed, in which the pain was felt in the iliac region of the affected side, and not at all in any part of the chest, even upon a full inspiration or coughing; and adds, that this form of latent pleurisy "has hitherto not been noticed by writers." This latter assumption

(*a*) A Treatise on the Diagnosis and Treatment of Diseases of the Chest, page 472.

of originality is altogether unwarranted, and has surprised us much in a writer of such extraordinary research as Dr. Copland. Andral, in describing that form of the disease where the inflammation attacks that portion of the pleura covering the upper surface of the diaphragm, says that the pain often affects the hypochondrium, and even extends as far as the flank, so that it might be mistaken for abdominal inflammation; and out of four cases which he narrates, the disease was for a long time latent in one. Cruveilhier, also, observes that he has known the pain affect the loins, and simulate lumbago.

Empyema is next treated of at much length and with great ability; we cannot find that Dr. Copland has omitted any of the recent investigations into the diagnosis and pathology of this result of pleuritic inflammation, most of which must be ascribed to our own countrymen. He awards their due meed of praise to Dr. Stokes and Dr. Macdonnell (now of Montreal), but by some oversight omits to mention the name of the late Dr. George Greene, Professor of Medicine in our School of Physic, to whom the whole merit of whatever information we possess, as to the copious purulent expectoration which occurs in some cases of empyema without any fistulous opening into a bronchial tube, is due; for he was the first to describe, in the seventeenth volume of our former Series, this *metastatic* mode adopted by nature for the removal of the purulent accumulation in the pleural cavity, and the perplexity which might be thereby caused in our diagnosis.

In empyema, when the fluid causes ulceration of the pleura and of the thoracic parietes, so as to point externally and thus become evacuated, we look upon it as a much more favourable sign than when it escapes by a fistulous opening through the lungs and bronchi; but Dr. Copland classes both these modes of termination of the disease together, and looks upon them as being forms from which recovery rarely takes place. The signs of pleuritic effusion pointing externally are often very obscure, and especially in children, in whom, as Dr. Williams remarks, the matter sometimes burrows under and between the muscles and integuments of the chest, and points at several places, and often at a distance from the pleuritic perforation. Thus it sometimes points under the pectoral muscle, and not unfrequently close to the spine. In one of the first cases of empyema which we ever saw, the matter lay so deep beneath the long dorsal muscles that for many days it completely escaped detection, notwithstanding attention having been called to the part by the muscular pain complained of there by the patient himself; nor could fluctuation be detected with the most careful

attention. Eventually the matter made its way beneath the scapula and pointed at the axillary edge of the latissimus dorsi; and when the abscess was opened pus could be forced out of the orifice, by pressure over the indistinct tumour lying along the spine. This case ultimately recovered; indeed, we have generally regarded the termination of empyema by perforation through the thoracic parietes as a favourable result.

Much stress is laid by Dr. Copland on the *sensible* properties of the blood in pleurisy, as furnishing important information with regard to the states of vital power and of vascular action characterizing the disease at the time blood is abstracted. He complains with much reason of the neglect into which this source of valuable information has recently fallen, and cavils at the over-attention now paid to its *chemical* constitution.

"This important source of information," says he, "is neglected, and the particular mode of studying the conditions of the blood in disease that actually furnishes the smallest amount of useful information to the practical physician is that which now attracts attention, although this very small amount cannot possibly be ascertained by the practitioner at the only time when it can prove in any way advantageous, whilst it causes the neglect of that knowledge which instantly furnishes the most important pathological and therapeutical indications.

"Let the candid and practical reader peruse the accounts of numerous analyses of the blood made by German and French chemists and pathologists, especially those made with a view of showing the composition of it in pneumonia, pleurisy, rheumatism, erysipelas, &c., and he will find, according to the summaries of these analyses given in Simon's Animal Chemistry applied to Physiology and Pathology, with the additions by Dr. Day, the very slight differences, or even the sameness, of the results, as regards these and some other diseases. Having obtained the full amount of knowledge he possibly can derive from these sources, let him next endeavour to apply it to practical purposes; and if he can do so, with only one-tenth of the advantage which may be derived from attention paid to, and an acquaintance with the sensible appearances and properties of the blood, he will be much more fortunate than I can credit.

"It is very justly remarked by Vogel, that it is very difficult, indeed impossible, to draw any certain conclusions from the statements of the above-mentioned and other observers, respecting the changes of the several constituents of the blood, or the causes of these changes. In fact, our whole knowledge of the chemical constitution of the blood in both health and disease is most unsatisfactory, and the statements of different writers vary so widely, that it is impossible to deduce any general laws from them. And I may add to this opinion of this able pathologist, that writers on the chemical constitution of the blood in disease have shown only how very

little information they are able to give upon the subject; and that little evinces its insufficiency even for the purposes of either a theory or a hypothesis, and its almost total inapplicability to any practical purpose. It is, therefore, to the old fashion of observing the sensible changes and states of the blood, and of connecting these changes with the states of vital power and of vascular action upon which they manifestly depend, that we must recur with any hopes, in the present state of our knowledge, of practical advantage."

The combination of pleurisy with pneumonia—pleura-pneumonia—Dr. Copland very correctly divides into three forms: first, that, in which pneumonia is associated with slight pleurisy; second, the combination of pleurisy with slight pneumonia; and third, pleura-pneumonia, properly so called, in which the two affections are nearly equal in degree. The third form is much less frequently met with than either of the two first; as originally noticed by Laennec, it is, *cæteris paribus*, less dangerous than simple inflammation of either the pleura or the lungs.

Having first taken a short review of the different plans of treatment proposed for pleuritis, the author describes the plan recommended by himself; it appears to be a modification, or rather a combination, of most of those he has previously described; that is to say, he does not recommend blood-letting, mercurials, antimonials, diaphoretics, purgatives, or counter-irritants exclusively, but he employs all, and somewhat in the order we have enumerated them. Nor does he at all enter into the controversy as to whether mercurials given so as to produce speedy salivation, or tartar-emetic administered as a contra-stimulant, should be preferred in the treatment of pleuritic inflammation. The mercurial plan, our readers are aware, is now most universally relied on by the British School of Medicine; the chief indications expected from the production of salivation, being the arrest of inflammatory action, the prevention of effusion, and the promotion of absorption if effusion does take place. The contra-stimulant method of treatment was much relied on by Laennec, and is still chiefly used by the continental school. The latter, in our own experience should be preferred, where we see the patient at the very commencement of the disease, as it is more certain to cut short the inflammation at its very onset; but where the effusion, whether solid or liquid, has already taken place, mercury given so as to produce *speedy* manifestation of its effects on the system can alone be relied on. Moreover, the tartar-emetic plan is not at all admissible in the very old or debilitated, or in broken down habits of body, and is, above all, contra-indicated where

the type of the season is of an adynamic or typhoid nature, for, like most other diseases, pleuritis assumes the character of the prevalent epidemic type.

In the application of blisters in pleuritis and in other diseases of the lungs, we have found much advantage from adopting the dressing of raw cotton first suggested by Dr. Douglas Maclagan of Edinburgh. The blister is left on for five or six hours, according to circumstances; a poultice is then applied for two hours, and the raised cuticle having been removed with a pair of scissars, the raw surface is covered with a thick layer of French wadding: the blistered surface heals completely in about twenty-four hours, but it is so little painful after twelve hours that percussion and auscultation may be performed over the part,—a matter of much importance in pulmonary affections. We have now used this plan of applying and dressing blisters for several months both in hospital and private practice, and we can confidently recommend its employment to our readers, as a very great improvement on the old system.

As regards the operation for empyema, Dr. Copland agrees with all recent writers as to the symptoms demanding the operation, and its mode of performance. He insists, with much truth, on the advantage of operating as early as possible, while the lung is still in a sufficiently healthy state to recover its normal condition after the evacuation of the fluid, and thus prevent either of two great evils, a recurrence of the effusion, or contraction of the thoracic parietes at the affected side to fill the void left. He fully agrees with Dr. H. Roe in the opinion expressed by him, that in no instance can the patient be *perfectly cured* when the operation is delayed until five or six weeks after the commencement of the effusion. He also admits the correctness of the, we believe we may call it, axiom, that where indications appear of the puriform nature of the effusion the operation can scarcely be performed too early; but he does not lay sufficient stress on the advantage to be derived from the employment of the exploring needle to ascertain this. Dr. Copland recommends the Hippocratic method of evacuating the fluid at successive times, chiefly because it gives the lungs time to expand; but we do not think any decided rule of this sort should be laid down: circumstances differ so much in different cases, that what would be the best mode of procedure for one might be the very worst for another.

The next article in the Dictionary is a short essay on *the structural changes of the pleura not necessarily arising from inflammation*. It is an excellent *resumè* of our present know-

ledge on the subject; but we do not find sufficient novelty in it to induce us to give any analysis of its contents. The same remarks apply to the short articles on *pleurodynia* and *pneumothorax*.

We have had much pleasure in bringing under the notice of our readers two additional Parts of Dr. Copland's great work, and we only wish that he would afford us an opportunity of reviewing his labours at shorter intervals. It needs not to express our opinion of the Dictionary of Practical Medicine, —an everlasting monument of talent, industry, and research, of which the British School of Medicine has just reason to be proud, and which, when completed, must earn for its author a never-dying fame.

A practical Treatise on the Causes, Symptoms, and Treatment of Spermatorrhœa. By M. Lallemand, formerly Professor of Clinical Surgery at the University of Montpellier, &c. Translated and edited by Henry J. M'Dougall, &c. London, Churchill. pp. 333.

We do not think it necessary to apologize to the practical physician, for bringing before his attention the subject of spermatorrhœa. The disease being in many instances the result of a disgusting vice, ought not to be a reason for the medical man to discard its consideration: if we even leave syphilis out of the question, how few disorders of the frame are there, which are not the results of human faults or follies. It is not the province of the physician to canvass the moral or immoral causes of disease; his office is to relieve suffering, from whatever source it may arise, and true dignity will be best maintained by performing this task in the most perfect manner. The judicious physician, therefore, will act most in accordance with his honour by investigating the phenomena of each disease, and the means of its alleviation, no matter how abhorrent to every principle of propriety or delicacy may have been the causes which produced it.

The history of spermatorrhœa is as old as the history of medicine. Hippocrates gives a description of it, under the name of "tabes dorsalis," much more graphic than any which has since been published. Wickmann in 1817, and subsequently, Sainte Marie, wrote valuable monographs on this disease; but in modern times no one has paid so much attention to the subject as the author of the present book, M. Lallemand, the late surgical professor at Montpellier. We shall in the following

pages furnish our readers with an analysis of the volume before us, together with such critical annotations as our experience may suggest to us.

Involuntary discharges of the seminal fluid may occur under various conditions, which differ much in their respective degrees of importance. They may be caused by too great excitement of the genital apparatus, following venereal excesses, or continued masturbation; or they may occur spontaneously during sleep, in a healthy and continent individual, and probably may, under such circumstances, prove, as M. Lallemand thinks, rather beneficial than injurious. It is manifest that a judicious discrimination of the nature and causes of these emissions is necessary to enable us to assign them as the causes of general and severe symptoms.

M. Lallemand thus recapitulates the causes which he supposes may give rise to spermatorrhœa:

"The first I considered was *blennorrhagia*, tracing the inflammation from the orifice of the glans penis, and considering all the changes produced by it in the tissues. Secondly, I spoke of *cutaneous affections*, pointing out the mode in which, by propagation of the cutaneous irritation through its continuity with the mucous lining of the urethra, involuntary seminal discharges arise. Thirdly, I considered the *influence of the rectum*. This I divided into two kinds; the one being mechanical, arising from an obstacle to defæcation or from constipation, the other a vital action, producing its effects by the extension of irritation from the rectum to the prostate and seminal vesicles. The fourth cause of which I treated was *abuse*. Here I pointed out the various causes of abuse, their importance, and the varieties of abuses. The fifth cause that came under my notice consisted of *venereal excesses*, and here I shewed the circumstances which constitute excesses, and the conditions in which slight sexual intercourse may be injurious. Sixthly, I considered *the action of certain medicines* in inducing involuntary seminal discharges. I shewed the effects of astringents, purgatives, and medicines which stimulate the urinary organs, such as nitrate of potass, &c.; I also mentioned the action of coffee and tea when taken in excess. Seventhly, *the action of the cerebro-spinal system* occupied my attention. I here considered the action of the cerebellum and spinal cord. Eighthly, I considered congenital predisposition; and here malformations came under my notice, with phymosis, exuberant prepuce, vitiated secretion of sebaceous matter, hereditary predisposition, congenital debility, &c."

The foregoing quotation will serve to shew how numerous the causes are to which M. Lallemand ascribes this disease. We shall now proceed to consider these causes somewhat in detail.

Hippocrates wrote only of venereal excesses as the cause of tabes dorsalis: Tissot, and other writers, have added masturbation. The remaining causes enumerated in the above extract have been, for the first time, suggested by M. Lallemand. Of all these he considers blennorrhagia, or gonorrhœa, to be the most active and the most direct, as well as the most easily appreciated. To understand M. Lallemand's theory of the production of the disease, it is necessary to know the pathology which he assigns to spermatorrhœa. Former writers imagined this disease to be essentially one of debility: whether it was supposed to arise from venereal excesses or from masturbation, it was to the weakening effects of these causes that pathologists solely looked. Diminished innervation, or feebleness of the genital apparatus, was in every instance regarded as the cause of the involuntary emissions and other symptoms which characterize the disease; but M. Lallemand, while he admits the debilitating influence of these causes, at the same time looks on the immediate and nearly universal cause of diurnal emissions to be of a local and inflammatory nature. This is one of the most important results of the investigations so long and assiduously pursued by the Montpellier ex-professor. If it be true, it leads to a rational and, according to him, a very successful mode of treatment. We shall proceed to lay before our readers the reasons offered by M. Lallemand for his belief in the inflammatory nature of this disease.

This pathologist states, what all know to be true, that the genital organs are very seldom examined *post mortem*, except when some remarkable symptoms during life lead to such examination: the chief causes of this neglect are, no doubt, the trouble and difficulty of either exploring the parts *in situ*, or of removing them without injury. According to M. Lallemand's experience, if these organs were generally and carefully studied at autopsies, structural changes would frequently be detected in many cases in which no local symptoms had attracted attention during life. He describes certain cases in which ulceration was found to have existed in the seminal vesicles, and in which either recent albuminous effusion, or old adhesion, was discovered on the adjacent peritonæal surface; and he appeals to the frequency of the latter adhesions as a proof that similar inflammatory attacks of the vesiculæ seminales are very common, although they may leave after death no other evidence of their previous existence, except the presence of these old false membranes on the adjacent serous surface. He sometimes found that the orifices of the ejaculatory ducts, in place of being circular, formed one elongated and irregular cleft: the

ducts themselves may be very much enlarged; and he has once seen the orifice sufficiently large to admit a goose-quill. He has found the ducts sometimes insulated, as though dissected, by the suppuration of the prostate; at other times thickened, hardened, and cartilaginous, or even containing osseous granules. In cases of suppuration of the seminal vesicles, he has generally found the pus to present all the appearances of having been long retained, a circumstance not difficult to understand when we recollect the structure of these receptacles, composed of ramified cells, and the manner in which they are placed out of the direct course of the semen, to be used as reservoirs for it. In some cases he has found, contained in the cavities of the vesicles, a yellowish, homogeneous substance, soft, like plaster, or even chalky, the true origin of which he believes to have been inspissated pus.

M. Lallemand attributes, with great probability, these appearances to an inflammation which had spread from the urethra to the genital organs. Broussais's proposition may not be universal, but we believe it to be very generally true, that inflammations of deep-seated organs are extensions of the inflammations of surfaces. How frequently have we seen cystitis and nephritis following gonorrhœa or stricture; and who, at the present day, will contend that orchitis is other than an extension of a blennorrhagic inflammation? We had hoped, however, that M. Lallemand would have afforded some direct evidence that urethritis is the most usual cause of spermatorrhœa. We cannot think that tenderness about the prostatic portion, experienced during the introduction of a catheter, or even the successful result of treatment, are sufficient proofs of this important pathological position. We are not told whether the urine is usually albuminous in those cases: in acute urethritis we have constantly found it to be so. In chronic urethritis the urine is always more or less purulent. Neither the chemical nor microscopical descriptions of the urine afforded by M. Lallemand, are to our minds satisfactory.

If it be admitted that a condition of irritation, existing at the neck of the bladder, and in the prostatic portion of the mucous membrane of the urethra, be the immediate cause of spermatorrhœa, it will not be difficult to understand in what manner gonorrhœa gives rise to this disease. That true inflammation often complicates the specific catarrh of gonorrhœa, we have frequently had occasion to verify. We have often ascertained the urine to be albuminous in this disease, in cases where precautions were taken to prevent the admixture of pus, which

necessarily accompanies the first gush during its discharge: and we can well comprehend how the injudicious employment of balsamic medicines might permanently prolong this inflammatory condition. Under such circumstances inflammation may either creep along the ejaculatory passages, or the glandular structure of the testes may be stimulated to increased secretion, just as the saliva flows when we chew orange-peel. The following observations of M. Lallemand are judicious:

"Anti-venereal treatment is frequently also employed in patients who have suffered merely from blennorrhagia, and in a very numerous class of cases it produces a serious increase of the irritation in the genital organs, and causes the appearance, or exasperates the effects of involuntary spermatic discharges. Cases of this nature often present considerable difficulties of diagnosis; and the solution of these obscurities is always of much importance in determining the treatment to be followed. Anti-venereals are not the only therapeutic agents which produce such unfortunate effects; those which a blind routine of practice employs in cases of blennorrhagia have not been less injurious; among these it is especially necessary for me to mention astringent injections, copaiba, cubebs, tonics, and bitters, employed too soon, or in extreme doses. All these means act more or less by exciting the genito-urinary organs; it is therefore easy to understand that their untimely or immoderate use must favour an extension of the inflammation from the urethra to the mucous membranes, which are continuous with it. I am far, however, from wishing to proscribe the use of those remedies, and I willingly bear testimony to their beneficial effects, after the inflammatory symptoms have been subdued. A time arrives when the mucous membrane of the urethra, like all other membranes of the same class, requires the employment of tonics and astringents; but in the way they are daily prescribed, I am convinced more harm than good results from their use."

In corroboration of M. Lallemand's views, we have long satisfied ourselves that physicians form too confined a notion of the effects of mercury, in limiting the physiological action of this mineral to the salivary glands; we have not the slightest doubt but that it at the same time acts as a powerful stimulus on other glandular organs; we have often known it to cause the urine to become neutral or even alkaline, and we can see no reason why it should not act as a stimulus on the testes.

In all the cases of spermatorrhœa following blennorrhagia, related by M. Lallemand, the urethra retained an excessive irritability, especially in the prostatic region; the patients felt constant pain, weight, heat, darting, or painful tickling in this situation; and those sensations were increased by the passage

of urine. Catheterism, though performed carefully, always produced acute pain and spasm, sometimes sufficiently violent to simulate stricture.

A few of the patients experienced symptoms indicating an affection of the prostate, such as swelling of the organ, sense of weight in the rectum and perinæum, darting pains in the neck of the bladder, behind the pubes, &c., and in one case the inflammation of the prostate ended in suppuration. In many cases the testicles were swollen, inflamed, and painful. The spermatic cords also shared the condition of the testicles. In some patients the seminal emissions contained blood or pus. The semen is not only expelled involuntarily, but M. Lallemand supposes that it must be secreted in greater abundance, in order to account for the great frequency of its emission, and the weakening and exhaustion that so rapidly proceed.

M. Lallemand gives several cases of spermatorrhœa, which he believes to have arisen from a metastasis of a cutaneous eruption. He says:

"We should think twice before we pronounce on the nature of an urethral discharge occurring in a person subject to cutaneous eruptions, especially when their suppression has previously been followed by inflammation of some other mucous membrane. Yet we must always bear in mind that those persons are liable, in common with the rest of mankind, to the occurrence of blennorrhagia, which would even put on, in their particular cases, greater virulence than usual, and must therefore greatly increase the predisposition of persons subject to cutaneous diseases to suffer from spermatorrhœa."

That constipation, ascarides, and other causes of compression and irritation in the rectum, should produce evidences of irritation in the urinary and genital organs, need not surprise us. We have known the urine to become purulent in cases of enterital and uterine disease, in which it was manifest that a low form of inflammation had spread from neighbouring organs to the mucous membrane lining the ureters or bladder. We can, therefore, easily understand that a long continued pelvic irritation may in predisposed cases give rise to urethral discharge or spermatorrhœa. M. Lallemand describes several such; and he conceives that he has proved that affections of the rectum may excite involuntary emissions; first, mechanically, by compressing the seminal vesicles during the passage of fæces; secondly, vitally, by the extension of irritation from the rectum to the seminal vesicles.

It cannot be denied that the habit of self-abuse is the most frequent, as it is the most degrading, cause of spermatorrhœa. It is with pain that the physician is forced, by a consciousness

of duty, to make himself acquainted with the revolting details of this disgusting propensity. Fortunately, in Ireland, we have not the consequences of this vice amongst the female sex obtruded upon us. We have had abundant opportunities for ascertaining that masturbation must, at the utmost, be very rare amongst females in this country. Devergie's work on legal medicine informs us, in an unequivocal manner, that such is not the case in other lands. Amongst boys, however, we fear that the habit of self-abuse is as common here as elsewhere, and in practice we not unfrequently meet with its sad consequences.

The forms of abuse are, however, very various. Lallemand mentions a case in which it was practised by the individual suspending himself from an elevated support by the arms. In other instances it is brought on by horse exercise We have known an instance in which it was produced by sliding down a balustrade. The ill effects appear to occur in two distinct ways: first, by the weakening effects of the losses occasioned; secondly, by the state of nervous excitement brought on. That similar causes of excitement may produce similar effects is shewn by a case related by Deslandes, in which a child brought on a bad state of health, with symptoms analogous to those of spermatorrhœa, by tickling his navel, although no evidences of genital irritation were exhibited.

Abandoning the habit of abuse will not always restore the health. Lallemand explains this, by supposing that in these cases a low form of urethral and genital inflammation has become established, giving rise to diurnal and unconscious pollutions. Those may assume the form of a gleety discharge, either constant or remitting; or they may be solely recognisable by an examination of the urine, the secretion constantly flowing back into the bladder. Lastly, it may be remarked that few patients contract spermatorrhœa from any other cause, who have not become predisposed to it by habits of self-abuse.

We shall now direct the attention of our readers to the symptoms of spermatorrhœa. Among these the most important are the involuntary emissions, which may occur either during sleep or wakefulness. Those which happen during sleep may not be injurious,—they may even, under certain circumstances, be serviceable,—and are sometimes, in case of true spermatorrhœa, evidences of returning health. M. Lallemand thinks that the injurious or other effects of nocturnal emissions may in some measure be judged of by the nature of the patient's dreams, whether pleasurable or otherwise. Diurnal pollutions are injurious in proportion to the absence of sensation; those which escape without the consciousness of the patient

are followed by the greatest debility. When the escape takes place with the urine, and without any sensation except that of pain or scalding in the act of micturition, the worst consequences are to be apprehended. According as the disease persists, the appearances presented by the urine vary. If, as not unfrequently happens, nephritis or cystitis should complicate the genital lesions, the urine will present the usual phenomena of those diseases. In the former case it will be scanty, neutral, and, perhaps, sanguinolent; in the latter, albuminous or purulent, in proportion to the sthenic character of the inflammation. Whether complicated or not with these inflammations, the urine may contain spermatozoæ, dead, more or less altered in form, and lying at the bottom of the vessel As the disease progresses the spermatozoæ become more difficultly recognizable; they appear less perfectly developed, and at length are no longer capable of being detected. According as the spermatozoæ cease, M. Lallemand describes another appearance which becomes more remarkable with the persistence of the disease,—the appearance of a light cloud studded with brilliant points, and little gelatinous masses, like rice or millet grains, which subside to the lower part of the vessel, but re-ascend by slight agitation. M. Lallemand says that he has found a similar matter in the seminal vesicles; he considers it to be a secretion from the lining membrane of these bodies, which increases in disease to a true catarrh.

We are surprised that, in treating of the general symptoms of spermatorrhœa, M. Lallemand has neglected to describe those which proceed from a deficiency of the red globules. In our experience, symptoms of chlorosis are among the very first which present themselves; and when we see a young lad getting pale, and find a *bruit de diable* in his cervical region, we are always led to suspect, if no hæmorrhage has taken place, that he has acquired bad habits. M. Lallemand describes cases in which the disorders of circulation led to the erroneous diagnosis of cardiac disease; but, although he detected the error, he does not appear to have ascertained the cause.

The most remarkable and frequent of the general symptoms connected with spermatorrhœa are those connected with the nervous system. Diminution of intelligence is in most cases perceptible; this may prevail as far as dementia on the one hand, or melancholia on the other. Thus many of the cases described considered themselves to be pursued by enemies, and sometimes believed themselves to be suspected of unnatural crimes. These hallucinations sometimes end in suicide. As regards the senses, alterations the most opposite

occur in different cases. Thus, sometimes there is intolerance of light; on other occasions amaurosis, more or less complete. Lallemand finds the sensation of formication described by Hippocrates to be much less general than the description of the distinguished Grecian would lead us to suppose. With respect to the muscular system, there may be either spasms and convulsions or paralysis. Probably, in connexion with the altered innervation produced by spermatorrhœa is the obstinate dyspepsia which torments the greater number of these patients. Nutrition is not always interfered with, many persons who have become impotent through the long persistence of this flux, retaining their good looks and muscular development. We shall not dwell on the well-known symptoms of spermatorrhœa,—the downcast eye, the tendency to stammering, the solitary habits, and dislike of female society, &c.

In the treatment of involuntary seminal discharges it is of less consequence to seek their primary than to discover their maintaining cause. For instance, pollutions may have been primarily excited by masturbation or venereal excesses, and afterwards be kept up by affections of the skin, hæmorrhoids, &c. In such cases it is evident that the practitioner must treat the existing cause. Involuntary discharges may either arise from actual debility or relaxation of the spermatic organs, or from a state of irritation or chronic inflammation of the parts, after having been first produced by very different remote causes: in treating such cases, then, the remote causes are not to be considered, while too much importance cannot be attached to the actual condition which keeps up the disease. "It is," says M. Lallemand, "this *actual* condition of the spermatic organs that must be altered in order to obtain a cure."

When the emissions are kept up by the presence of ascarides in the rectum, it is an object to employ such means as will remove the entozoa without irritating the mucous membrane. Injections of water, at first tepid, and finally cold, may effect this object; oily injections are also useful; and a small quantity of the *unguentum hydrargyri mitius*, if introduced into the rectum, will often give immediate, although only temporary relief.

In cases of pollution excited by cutaneous eruptions, M. Lallemand has found great benefit from the employment of baths of either the natural or artificial sulphuretted waters. In eruptions about the anus, there is no remedy equal to ascending douches, especially where the disease extends to the mucous lining of the gut. In emissions depending on debility or relaxation, galvanism, cold bathing, tonics, especially chalybeates.

have all been found useful. But the cases that are the most obstinate, as well as the most likely to escape the observation of the medical attendant, are those in which involuntary diurnal emissions are kept up by a chronic or subacute inflammation of the mucous membrane lining the prostatic portion of the urethra. The advice given by Hippocrates is manifestly better adapted to cases of this description than to those of an atonic kind. He recommends that the patients should be fomented over the whole surface, that lavements should be given, and, after a time, tepid baths used. After having prepared the stomach by a mild emetic, he recommends skimmed milk as a beverage, asses' milk, and, during forty days, cow's milk. "So long as this milk diet shall continue," he adds, "administer barley-water in the evening, and forbid all solid food; afterwards give soft food, in small quantities at first, and fatten the patient as much as possible." He further states that wine should be abstained from during a year. All these directions shew that Hippocrates did not consider *tabes dorsalis* as a disease of atony, but rather one of irritation and excitement; and M. Lallemand's experience tells him that his advice is the best possible to follow in the great majority of cases. In addition, he has found that in the milder cases the introduction of a catheter may be sufficient, as in cases of morbid sensibility, to modify the condition of the mucous membrane.

The remedy which, in severe cases, M. Lallemand has found most useful, is cauterization of the mucous membrane of the prostatic portion of the urethra, by means of the nitrate of silver. This is a very severe operation, but is, in many cases, the only known means of cure, and in the majority it is very successful, according to the testimony of many of the most eminent of the French surgeons. We shall conclude our notice of M. Lallemand's work, by mentioning the directions which he gives for the performance of this operation. Before proceeding to cauterization, it is indispensably necessary to introduce a catheter, for the double purpose of taking the exact length of the urethra, and of completely emptying the bladder. By carefully withdrawing the instrument while the stream is passing, the sudden cessation of the latter will point out the moment when the eye of the catheter has entered the neck of the bladder, and the distance of the eye from the orifice of the urethra can then be easily marked on the catheter. After the removal of the instrument, the length of the urethra, as indicated by the distance of the mark from the eye, can be measured on the *porte-caustique*, and thus, the operator will be enabled to ascer-

tain when the end of the instrument has reached the neck of the bladder. This is a point of considerable importance. The bladder must be completely emptied, in order that no urine may penetrate into the tube of the *porte-caustique*, and that none may enter the urethra during cauterization.

The *porte-caustique* consists of a tube enclosing a stem at the extremity of which is a cuvette, which is hollowed for containing the caustic. The latter is to be melted into the cuvette by means of a spirit lamp. It may be made of silver or platinum, but no soldering should be permitted, as this is apt to be acted upon by the caustic. The patient should lie down during cauterization. When the extremity of the instrument approaches the neck of the bladder, the irritability of the passage increases, and the patient's agitation often becomes so great as to inconvenience the operator. As soon as the extremity has entered the neck of the bladder, the instrument should be a little withdrawn, and then the tube being for a short distance drawn back on the stem, the cuvette should by means of the latter be *very rapidly* passed over the surface of the prostate. The instrument should then be *instantly* closed, and slowly withdrawn from the urethra. It must be remembered that cauterization is practised, in these cases, in order to bring on a lasting change in the condition of the tissues by means of active inflammation, and not for the purpose of causing loss of substance; and hence it is not necessary to produce a slough. The action of the nitrate of silver should be just as rapid as in cauterizing the conjunctiva in chronic inflammation, ulceration of the cornea, &c. There is the same intention in both these different cases, and the result obtained is of the same nature.

M. Lallemand states that he has been in the almost daily habit of cauterizing the urethra for twenty years; and that he has never seen, in his own practice, any of the violent effects, such as retention of urine, hæmorrhage, long-continued violent pains, narrowing of the passage, &c., described by some operators. He should indeed almost doubt the accuracy of these descriptions, had he not been consulted in some cases in which these symptoms had been set up. But he ascribes these ill effects as resulting from the application of the caustic being too long continued, instead of consisting in a rapid touch. He likewise reprobates the practice of too frequent cauterizations.

Before concluding we may mention that M. Lallemand recognises the frequent coexistence of spermatorrhœa and dia-

betes. This connexion, as well as the frequent connexion of amaurosis with spermatorrhœa, was, we believe, first pointed out by Dr. Cane, of Kilkenny, in the former Series of this Journal.

We cannot very much praise Mr. M'Dougall's translation; and we are the less inclined to do so, inasmuch as he very coolly tells us in his preface, that he has "endeavoured more to render the sense of the author in as few words as possible, than to give a full and literal translation." Now, we certainly consider this to be a very unwarrantable liberty with a living author.

Handbuch der Pathologie und Therapie. Von Dr. C. A. WUNDERLICH. In drei Bänden. Stuttgart, 1846–7.

A Manual of Pathology and Therapeutics. By Dr. C. A. WUNDERLICH, Professor of Medicine and Chief of the Medical Clinique at Tübingen. 3 Vols. large 8vo. Stuttgard, 1846–7.

WHEN noticing Dr. Canstatt's voluminous and truly encyclopedical work in our former series(*a*), we could not help remarking how unsuitable was the title of "Manual" he had affixed to it. The same observation is nearly equally applicable to Dr. Wunderlich's Manual, which, if it had been produced in this country, would, we imagine, from the minuteness of its details, and the numberless authorities and opinions therein quoted and criticised, be considered worthy of being dignified by a name of greater pretensions. The work, although German, is written in a clear and concise style, and the research it exhibits is very creditable to the author, who is evidently a man of sense and a good observer. In saying this, we vouch for no more than his general accuracy, for in some points, as will appear subsequently, we hold opinions very different from his. The space allotted to us will not at present allow of our noticing in detail more than that portion of the third volume devoted to the affections of the respiratory organs.

This subject the author commences by a lengthened and accurate history of the natural conditions of the lungs, air passages, and chest, at all ages, from fœtal to adult life, as well as of the frequent deviations of the thorax from the healthy and normal standard, which depend on the constitution, sex, muscular development, occupation, expansion of the lungs, the

(*a*) Vol. xxvi. p. 99.

state of the abdominal viscera, or individual peculiarities,—considerations which, in our opinion, should never be omitted in any systematic work on the subject.

Passing over his general remarks (occupying upwards of fifty pages) on the history, etiology, pathogeny, symptomatology, diagnosis, and therapeutics of diseases of the respiratory organs, we shall proceed to his special description of one or two diseases of much interest, and for our knowledge of which we are partly indebted to original German investigation. Under the head of motory affections of the glottis, we find two forms of spasm of the glottis ascribed to children.

1. The acute form, *Asthma Millari*, *Asthma acutum periodicum*, *Pseudocroup*, *Laryngitis stridulosa*, *Laryngismus stridulus*, &c.

2. The chronic form, *Asthma Koppii*, *Asthma Thymicum*, *Laryngismus stridulus*.

This division we cannot help thinking unfortunate, as it is not likely to give us clearer ideas on a subject about which there has been but too great a confusion of terms. The *acute form* described by the professor turns out to be nothing else than spasmodic croup, though, curiously enough, he seems to think they are different affections. It attacks, he says, children aged between one and a half and nine years, the male sex especially; it is either sporadic, or prevails during epidemics of croup, and is produced by sudden transition from warmth to cold, or exposure to the north wind. There are often premonitory symptoms, slight catarrh of the nasal passages and larynx, and febrile movements.

"The first attack comes on at night: after the child has been some hours asleep, it awakes suddenly in great distress with dyspnœa. Inspiration is accompanied with a peculiar shrill sound, owing to the narrowing of the glottis; the voice sometimes is completely gone, and there is a *hoarse cough*. The face is first red, afterwards bluish; the veins swollen; the pulse small and *frequent*. After a few moments the spasm disappears, occasionally by vomiting, the child is then exhausted, and falls asleep again. After a longer or shorter respite, sometimes on the same night, or following day or night, a second attack comes on.

"The future attacks may diminish in severity, or the disease may pass into an exudatory affection (croup), with sibilant respiration, hoarse, barking cough, permanent hoarseness of voice, and dyspnœa, with occasional exacerbations, when active fever sets in, and its advanced stage cannot be distinguished from croup."

The wonder, indeed, would be that it could be so distinguished, as the Professor's description is a perfect delinea-

tion of croup, on which it is very incorrect to bestow the names Millar's asthma and Laryngismus stridulus, these being commonly used to designate the true spasm of the glottis, which is essentially a spasmodic affection, is never accompanied by cough, or associated with inflammation of the air passages.

The last-named affection, described by the author as the *chronic form* of spasm of the glottis, may be found, he says, in connexion with enlargement of the thymus gland,—an open state of the foramen ovale, and of the ductus Botalli,—degeneration of the glands of the neck, and of the bronchi,—alterations in the central parts of the nervous system, more particularly in the brain, which may be in a state of hyperæmia, of softening, or of hypertrophy,—subarachnoid effusions of serum in the ventricles,—large fontanelles, with thinning and softening of the occipital bone,—alterations in the lungs, such as caverns and hepatization; or these organs may be congested as in cases of death by suffocation, and filled with dark blood, or a small portion of the lung may be found compressed by the enlarged thymus.

From all this it results, that, in this disease, no morbid alteration is constant, and that in many cases no other pathological appearance is discovered but that resulting from death by suffocation. If, then, he proceeds, the disease depends essentially on nervous constriction of the muscles of the glottis, the irritations giving rise to the spasm may originate in these muscles or their nerves; or this may be produced by impressions affecting the motory nervous fibres in their course, or by cerebral influences; or, finally, the irritation may be reflected from the sensitive nerves.

The author thinks that, whatever be the exciting cause of spasm of the glottis, there must be in consequence a tendency to excited action of the upper part of the spinal cord, of that part especially which represents the motory fibres of the glottis.

Although we are much disposed to doubt the opinion that enlarged bronchial glands, or the thymus, are capable of producing spasm of the glottis, which is undoubtedly often present independently of alterations of these parts, we cannot quarrel with our author for enumerating them, in obedience to custom, amongst its exciting causes. We feel ourselves, however, called on to remark, that in the treatment no mention is made of the necessity of attending to the state of the teeth, of the diet, or of the bowels; but we are given in place a list of various antispasmodics, narcotics, emetics, &c.,—remedies which, in their proper place, are, no doubt, serviceable, but which cannot replace the gum lancet, or the milk of a healthy nurse.

The author's account of *atelectasis pulmonum* is succinct and good, and he has well shown how it may be distinguished by its pathological anatomy from pneumonia, with which it has been too often confounded:

"The morbid appearances are generally confined to certain unconnected lobules, especially those situated superficially at the posterior and inferior parts of the lungs, and they commonly present a well-defined line of demarcation from the normal and healthy parts. They, besides, appear contracted and depressed, and are of a bluish or brownish red colour; they do not crepitate; they are solid, and sink in water. If the child be not long dead, these portions may generally be fully inflated from the bronchi, and they then assume perfectly the appearance of those parts of the lungs in which respiration had been established. The pleural covering of the affected parts is perfectly smooth, and exhibits no trace of exudation. The pulmonary tissue in the neighbourhood of the atelectastic parts may be in a state of hyperæmia (état fœtal conjestionnel of Legendre). When the state of atelectasis has continued long, or, in other words, if it be too limited in extent to prejudice life at an early period, or if death be prevented by proper care, then the unexpanded cells commence to adhere together, whereby their future expansion becomes impossible, and the cells cannot be artificially inflated even after death. Traces of atelectasis may be discovered even in after years, but such children as remain thus affected are more or less puny, are readily seized with congestion of the lungs and catarrhs, and they succumb to these in greater numbers than others.

In atelectasis the fœtal openings of the heart are still unclosed. An entire lung is seldom found in a state of atelectasis. This disease may be mistaken for general weakness, cardial cyanosis, apoplexy of the spinal marrow or brain, or, which is most common, for pneumonia, especially if the parenchyma surrounding the unexpanded lung be hyperæmic. A proper diagnosis from the latter may be secured by attending to the depression of the part in a state of atelectasis: its atrophic condition, the absence of tough fluid contents in it, its being not friable, the possibility of inflating the cells, the absence of false membrane on the pleura, and of infiltration into the bronchial glands, and the absence of fibrinous clots in the heart. Dr. Wunderlich thinks that French writers have very often mistaken atelectasis for lobular pneumonia, and still more generally for that form of it denominated by Rilliet and Barthez *pneumonie mamellonnée*, although Legendre and Baillie evidently go too far in regarding as remains of the fœtal state the disseminated pneumonic centres found in most of the cases of bronchitis of children. As to what De la Berge calls marginal pneumonia, in which the margins of one or more lobes appear uninflated,

brown, solid, and carnified, we agree with the author, that this is nothing but atelectasis. Bronchitis, pneumonia, and phthisis, are subjects the author has treated in an excellent manner; but we must here conclude with an expression of our sense of the great advantage the German student must derive from the study of such an elementary work as this.

The British Record of Obstetric Medicine, Surgery, and Diseases of Women and Children, &c. &c. To which is annexed a Library of rare Obstetric, Medical, and Surgical Monographs, &c. Edited by CHARLES CLAY, M.D. Manchester, Irwin. Published bi-weekly.

WE are happy to see that an English journal, exclusively devoted to midwifery and its allied subjects, the diseases of women and children, has been established. Such has for some time been a desideratum in the periodic medical literature of these countries, not only from the great and increasing extent of this department of the healing art, but also from the fact that, of all classes of the profession, accoucheurs are the most prolific of their literary contributions, and the most industrious in accumulating observations, and recording their experience. For this we think they are deserving of the greatest praise, and furnish an example worthy of being imitated by the other branches of the profession.

Besides original articles upon obstetric matters, and reviews, the "Record" will contain translations of rare and valuable monographs from the ancient and modern languages, and printed copies of manuscripts possessing any peculiar interest or importance. These will be paged separately, so that they can be bound up as independent works. Perhaps one of the most novel features of our new contemporary is the mode of conducting reviews, viz.:—"The author to furnish the work, accompanied with a faithful abstract of all that is material in the work, giving a clear idea of the nature of the same. The Editor reserving his right of comment." We have neither space nor inclination to enter into a discussion upon this point here; we would venture to say this much, however, that Dr. Clay seems to have been too sweeping and too severe in his condemnation of the plan of anonymous reviewing, as generally pursued in the present day; nor is it fair to argue against a system from what is an acknowledged abuse of it.

In the Editorial Address Dr. Clay further informs us that he is firmly resolved to oppose with his utmost energy quackery

in all its branches; and again, in another place, he announces, that "every communication, book, or even advertisement, that is based on quackery, or couched in *unprofessional language*, will be *rejected*." We rejoice to see this manly avowal, and sincerely hope that nothing may ever tempt him to swerve from his resolution. We have at all times given the most uncompromising opposition to charlatanism, under whatsoever name, shape, or guise, it presented itself; and it behoves every man who has the honour and welfare of his profession at heart to do the same. By such a course only can we hope to check its progress, or enlighten the public mind as to its real nature and proper limits.

The "Record" is published twice a month, and the alternate Number is chiefly taken up with the reprints and translations of monographs. Of those which have already appeared, one is the celebrated dissertation of De Graaf, upon the female testes or ovaria. This, which is translated by Dr. Knox from the original edition of 1688, contains an excellent description of the ovaries, and should be carefully studied by every one who is desirous of becoming acquainted with the anatomy and physiology of the female generative organs. We cannot forbear alluding to another of these monographs, namely, that by Fischer on the pelvis of the mammalia. This is prefaced and interspersed with some observations by Professor Autenrieth, and both together form a most admirable paper, full of instruction and interest, as well to the practitioner as to the lecturer.

This brief notice will, we trust, be sufficient to enable the reader to form a pretty accurate opinion of the general nature and character of this well-timed and useful publication. From what has been already said it will be seen that we approve of its design, and think that its Editor and proprietor, Dr. Charles Clay, is justly entitled to the thanks of the British medical community for so valuable an addition to our periodic literature. We heartily wish him every success in his laudable undertaking, and hope that the service he has rendered obstetric science may be duly appreciated and acknowledged.

Urinary Deposits, their Diagnosis, Pathology, and Therapeutical Indications. By Golding Bird, M. D. Second Edition. London, Churchill. 1846.

A Guide to the Examination of the Urine in Health and Disease. For the Use of Students. By Alfred Markwick, &c. London, Churchill. pp. 155.

We are rejoiced that public appreciation, justly merited, has rendered necessary the publication of a second edition of Dr. Golding Bird's work on urinary deposits. In our notice of the first edition in our former Series, little more than two years since, we prognosticated the success which it has since attained; and the rapid progress which urinary pathology has, even during this short interval, achieved, will, we feel convinced, secure a similar welcome for this edition, from the profession in Great Britain and America. We have compared the present publication with the former edition, and find many important sections nearly re-written. There are added also several illustrative woodcuts, which, we have no doubt, will be found very serviceable; and in every respect we feel much pleased at the rapid re-appearance of what we can scarcely, with propriety, call our *old* favourite.

Mr. Markwick's little book will be found very useful by the class for whom it was intended. Like all uncritical compilations, it is subject to certain defects, for when the opinions of many persons differing in education, talents, and opportunities, are indiscriminately placed in a catalogue, there must, of necessity, be in such a work a want of congruity and distinctness. This want becomes singularly manifest when the opinions offered by the same individual, at different periods of his progress in knowledge, are compared. Thus we are told in one paragraph, that Liebig accounts for the production of hippuric acid, under certain circumstances, by the reaction of benzoic acid on the *elements* of lactate of urea; and in the very next sentence we are informed that the presence of *lactic acid* and its compounds in the urine has been disproved by Liebig. The fact is, that the Baron had not discovered the latter fact at the time he penned the former explanation. But, although Mr. Markwick's book is not devoid of the defects which belong to all works of the kind, yet it is evidently compiled with considerable care and industry, and will be found to contain a great quantity of well-arranged information, by those who cannot afford to purchase more expensive works on the subject.

The Philosophy of animated Nature; or the Laws and Action of the Nervous System. By G. Calvert Holland, M. D., &c. London, Churchill. 1848. 8vo. pp. 512.

Dr. Calvert Holland has written a book, under the above title, in which he advances opinions somewhat peculiar to himself. He does not appear to have a high opinion of the authors who have preceded him in the attempt to discover nervous function. He states that Muller's objections to the hypothesis of nervous circulation "do not exhibit an enlarged view of the operations of the nervous system."—p. 189. Speaking of certain deductions of Dr. Marshall Hall, he considers them to be "characteristic of the mind of this physiologist. He abhors the broad path of scientific inquiry, and rarely grasps a principle in its comprehensive relations. The field which he surveys is always exceedingly limited, and he never rises from particulars to enlarged philosophical views."—p. 251. As to Sir Charles Bell, "his views in reference to the varied indications of the passions are scarcely worthy of the genius which established important distinctions in the properties of the nervous system. They do not display a comprehensive grasp of mind, or a power capable of tracing the relations of the diversified phenomena which fell under observation."—p. 326.

Lord Brougham comes in for his share. He is quoted as a "remarkable illustration of the truth, that if the mind, in its ambitious efforts, endeavours to embrace the vast and ever-widening field of science, of the arts, and of literature, it must necessarily, in proportion to the extension of its powers, skim the surface of each, rather than fathom the inexhaustible riches which lie hid in their depths."—p. 396.

Besides such chance shots as the foregoing, Dr. Calvert Holland occasionally indulges in general onslaughts, such as the following:

"Men distinguished by anatomical attainments, and engaged in the active duties of the medical profession, save where the dexterous use of the scalpel, or the educated touch, is brought into play, have the most limited resources at command in cases of difficulty. They are familiar with the animal system in detached or fragmentary portions, but when the functions of life present themselves in aggravated or unnatural conditions, they have not the necessary grasp of intellect to analyse and separate these into simpler forms, to educe order out of seeming confusion, or, in other words, to give to each phenomenon its just value."—p. 336.

It will be seen that modesty is not Dr. Calvert Holland's forte. He says his views "are adverse to all prevailing doctrines on the action of the nervous system, and feeling at every step of the inquiry, that if the soil which we have presumed to turn up is not altogether new, the riches with which it is pregnant are, for the first time, contemplated in their natural and comprehensive relations to the animal economy, we have brought to bear upon the subject the combined energies of the mind. . . . . No previous writer has taken the same enlarged views of nervous phenomena."—p. 425.

Next to his own discoveries, in Dr. Calvert Holland's esteem, are the mysteries of mesmerism and phrenology. Of the former he says:

"The facts which we shall adduce in corroboration of the existence of a nervous principle are numerous and incontrovertible. . . . . They are easy of demonstration, and the power of proof is in the hands of all. We allude to the influence of mesmerism."—p. 153.

Emboldened by this statement, we laboriously sought for the facts alluded to, but could only discover two, which we present to our readers:

"In touching Firmness, which was very largely developed in the head of a female, we invariably excited combative qualities to a most extraordinary extent. The organ after a time became so exceedingly sensitive, that if we offered to touch it when she was conscious she begged we would not, as she could not avoid striking, and such indeed was the fact. The force and suddenness of the blow, and the straight line in which it was delivered, were indeed remarkable."—p. 156.

We think the assault perfectly justifiable. What right had Dr. Calvert Holland to be eternally handling her Firmness? The other fact is the following:

"We have tested the attractive power on one in a sound and natural sleep, and the effect was to raise gradually the whole body from its recumbent position, which it resumed on a contrary movement of the hand. This case affords a striking illustration of the existence and influence of a nervous fluid. Not wishing the individual operated upon to know anything of the experiment, we retired, after a very imperfect demesmerization, before consciousness had fully returned, consequently leaving to some extent the effects of the power which had been excited. . . . . She was exceedingly susceptible of mesmeric influence."—p. 164.

Now we really cannot comprehend what brought Dr. Cal-

vert Holland into the girl's room to try his attractive powers, and leave her half asleep in the suspicious manner that he has himself described.

We cannot leave Dr. Calvert Holland without presenting to our readers his description of the Irish, or, as he calls them, "the degraded and grovelling millions of the sister kingdom:"

"The dull and inanimate eye,—the heavy features,—the open mouth,—the drooping head,—and a step as destitute of grace as it is of motion, form a picture which all can recognise."—p. 303.

We shall conclude with one other extract from this book, which we think peculiarly applicable to Dr. Calvert Holland himself:

"The bustling importance of vanity inflated with trifles is one of the most disagreeable objects in nature, combined, as it frequently is, with impertinence and ignorance."—p. 338.

We need say no more.

Introduction to Zoology, for the Use of Schools. By Robert Patterson, Vice-President of the Natural History and Philosophical Society of Belfast. Part II. Vertebrate Animals, with upwards of 160 Illustrations. London, Simpkin, Marshall, & Co. 1848. 12mo. pp. 476.

Elements of Natural History, for the Use of Schools and young Persons; comprising the Principles of Classification, interspersed with amusing and instructive original Accounts of the most remarkable Animals. By Mrs. R. Lee. Illustrated by Engravings on Wood. London, Longman and Co. 1844. 8vo. pp. 458.

We have long thought that Natural History was a study peculiarly fitted for the years of childhood;—not that it does not comprehend much with which the highest intellect will find difficulty in coping. We do not expect that a child can ever master the philosophical part of this interesting department of science;—how few grown men are capable of doing so! But of the facts on which Natural History is founded, there are few that a young child cannot comprehend, and the study and remembrance of those facts are particularly calculated to assist its education. Education,—how vague is the general interpretation of this much misunderstood, although important word! We mean by it the cultivation of the natural properties of the mind in its usual process of development. Know-

ledge is not the end of education; it is the improvement of the natural faculties in activity and applicability. To educate the mind we must understand the growth of the mind. First, Memory, then Imagination, lastly Reason; this is the progress of mental development; and if we desire to educate, we must cultivate these attributes according as they successively present themselves. Childhood is the period when organization of the senses and spiritual memory are in their greatest vigour. That is, therefore, the time for their cultivation. Natural History is peculiarly the science of sense and of memory. It and language are the two subjects to which childhood naturally cleaves. The scent, the hue, and form of flowers, the habits, appearance, and disposition of animals, strike on the mind, at this period of existence, with a force which they never afterwards exert. This is a link which connects the child with the first man, to whom all living creatures were presented, that he might name them.

It is with great pleasure that we again meet our friend Mr. Patterson, and doubly so as the present little volume calls forth nothing to nullify the meed of praise with which it was our pleasing duty some months since to greet the appearance of the first part of the work, now so successfully completed.

As the former part was entirely devoted to the invertebrate classes, the animals referable to the vertebrate type of structure are made the exclusive subject of the present, and, we think, with just as much success.

If there be one quality more than another which we would select as characteristic of Mr. Patterson's educational writings, we would certainly take his felicitous combination of the popular with the scientific. In the little work now before us the reader is made acquainted with most of the important truths constituting the present state of zoological science, and all this is brought before him in such a way as to be received by the least exercised capacity. With a style which is attractive without being too ornate, and sufficiently severe without the repulsive dryness with which scientific treatises are too often hedged in, the "Zoology for Schools" forms one of the best books with which we are acquainted for conveying to the young student an adequate knowledge of the animated beings which surround him.

In the treatment of his subject our author adopts the ascending mode. Beginning with the lower forms of animated existence, we are led, step by step, through organisms gradually increasing in complexity, till at last we arrive at the culmi-

nating point of the system,—the highest manifestation of physical development,—the intellectual and moral *Man*.

In the general survey thus taken of the animal creation, the reader is not made acquainted with the forms and habits alone of the various tribes of sentient existence. To *classification*, in accordance with the philosophic principles of modern biology, considerable attention is given; and the *geographical distribution* of animals, so far as established data will allow just conclusions on this point, is by no means overlooked.

Zoological science, however, cannot be restricted within the narrow precincts of the epoch in which we now find ourselves; the past ages of the world have also had their animated tribes; and though these have long since disappeared as living forms from the surface of the earth, they have left behind them in the fossil, into whose rocky tomb the hammer of the geologist has, after countless ages of darkness and silence, once more admitted the light of heaven, unmistakeable records of their strange existence.

Fully aware of the indefinite extension of zoological science into past time, our author has bestowed a due proportion of space upon the palæontological relations of the animal kingdom, and has placed before his readers numerous important facts connected with the ancient fauna of our earth, facts which cannot but prove in the highest degree acceptable. Take, for example, the discovery of the remains of the *Colossochelys Atlas*, the gigantic tortoise of the sub-Hymalayan tertiaries:

"In the north of India, and from the Sewalik Hills, which form a lower chain of the Himalaya mountains, great numbers of the fossil remains of vertebrated animals were discovered by Dr. Falconer and Major Cautley. Among these were numerous fragments of a gigantic fossil tortoise, which, after their arrival in London, were exhibited at a meeting of the Zoological Society, and are now in the British Museum. From the relative size of the bones, and portions of the shell of this extinct reptile, as compared with the corresponding parts of recent species, it was estimated that the lower shell (*plastron*) had been nine feet four inches long, and the upper shell or buckler (*carapace*) twelve feet three inches; eight feet in diameter, and six feet in height. The foot of the animal when living must have equalled in size that of the largest rhinoceros. The entire length of the tortoise, from the most careful admeasurement, was inferred to have been about eighteen feet, and its height more than seven.

"These remains were collected during a period of eight or nine

years, along a range of eighty miles of hilly country. From the circumstances under which they were met with, in crushed fragments, contained in elevated strata which have undergone considerable disturbance, no perfect 'shell,' nor anything approaching to a complete skeleton, was found. In 1835, when the first of these fossil remains were discovered, there was no record of any colossal reptiles of this order; and it became a question, 'To what animal could these enormous bones have belonged?' Vain, for a long time, was all research and all conjecture; the problem was still unsolved, and the interest attached to its solution continued daily to increase. At length a small land tortoise furnished to the investigators the data for its solution. One of its diminutive leg bones resembled in form one of the immense fossils. And, as in the 'Castle of Otranto,' the helmet which filled the court-yard, the gigantic foot, the colossal hand, and the sword which required a hundred men to carry it, were all associated together,—so, when the creature which had borne this ponderous fossil had been discovered, the mystery was revealed, and no difficulty was felt in assigning to every other bone its proper place."

Mrs. Lee's book, the second work at the head of this article, is admirably adapted for the purpose for which it was intended. We prize it as the production of an accomplished lady; its style is easy, and the information it contains most valuable; and, as might be expected from the reputation of the authoress, full of truth more fascinating than fiction.

Chloroform in the Practice of Midwifery. By ED. W. MURPHY, M. D., Professor of Midwifery, University College. London, Taylor and Walton. 1848. 8vo. pp. 28.

THE greatest event in modern surgery is undoubtedly the discovery of agents having the power of suspending sensation, without injury to life, during an operation. It required more courage to exhibit these agents in obstetric practice; and the credit of first using ether belongs to Professor Simpson, of Edinburgh. He has the further, and perhaps higher merit of discovering a new anæsthetic agent of greater power than ether, and attended with fewer disadvantages. We allude, of course, to chloroform, which, we believe, has now, both in surgery and midwifery, entirely superseded ether. In surgical operations we fancy that a bottle of chloroform finds its place among the usual array of instruments as a matter of course. In the practice of midwifery its progress has not been so rapid, and its use is by no means general. It is progressing, however, and we have no doubt that its employment

in obstetric operations will be nearly as common as in surgical. But before its use is general in ordinary labour, no doubt a considerable time must elapse, many prejudices must be overcome, and some reasonable objections removed. In Edinburgh, the influence of Dr. Simpson's energy has carried all before it; the ladies themselves are its partisans; they *will* have chloroform, and the accoucheur has nothing for it but to administer it. In London it has its advocates, among whom we are glad to find our excellent friend, Professor Murphy; but it has also powerful opponents. In Dublin it has been tried in hospital and in private practice, with somewhat varying results; in some cases, either from the mode of administration, or from the chloroform being inferior, no effects at all have been produced; in others, some inconveniences; but in many cases the results have been most brilliant and satisfactory; and accordingly the profession is divided, part objecting to it, part doubtful, and a third party in favour of it in all cases where no counter-indication exists. We have tried it in six or seven cases with the most favourable results. Natural labour has been shortened and disarmed of its suffering and terror; severe and agonizing operations performed without pain to the patient, and followed by calm sleep, and the operator spared the distress of heart-rending outcry, and at liberty to use his best skill without the usual resistance and distraction. Such has been our experience, and whilst we never press its use in natural labour, we shall never refuse it in proper cases, nor ever neglect it in operations where there are no counter-indications.

The great questions as to chloroform appear to be: first, whether it is right to give it? second, whether it is beneficial? and, third, what are its evil consequences?

The objection to its use, as a matter of right and wrong, is based on the fact that pain and sorrow in childbirth were pronounced as a curse upon the sin of our first parents, and that we have no right to interfere with such a positive judgment. But even waiving the philological dispute so ably settled by Dr. Simpson, those who use this objection forget that there were two other portions of the curse, viz., the necessity of earning our bread by the sweat of our brow, and finally, the penalty of death. Now we hear of no objections against machinery (since Mause Headrigg's time) for the purpose of saving labour; no one thinks of reverting to spade husbandry, even if a spade itself be not an infringement of the curse; and as far as we can see, every one does his best to postpone death, and, if he could, would feel little scruple in banishing it altogether; and what is wrong in the one case *must* be wrong in

the other. But perhaps if the gentlemen who are so willing to dispense with the part of the curse which applies to them could be made to bear the pain and sorrow of childbirth,—of just one labour,—they would change their opinion of the *lawfulness* of chloroform.

That chloroform is beneficial both to the patient and the operator now rests upon some thousands of cases, and may be considered as established. We have abundant testimony that it relieves the pain more or less completely, according to the amount administered, that it relaxes the soft parts, that it diminishes the nervous shock, and that it affords rest after labour is concluded; and in addition, that the absence of outcry, of resistance, and struggles, gives great facility for the successful performance of difficult or delicate operations. Lastly, that the operator is spared the distress or disturbance which are occasionally serious impediments to the exercise of his skill.

The greatest drawback to chloroform, in our opinion, is, that the limits of its use are so undefined, in consequence of the small amount of unfavourable results which have been recorded. We assume that, in common with all other remedies, there must be some cases in which it is improper, some in which it must do injury, nay, some in which so powerful an agent may cause death. And yet there are comparatively so few such cases on record, that in the absence of positive data we are obliged to construct imaginary ones, and perhaps prohibit its use in the very cases best suited for it. For example, it was assumed that, from the effects of ether on the blood, it would be likely to favour the recurrence of hæmorrhage, and therefore should be excluded in any case threatened with such an accident. Now, it is proved that there is ordinarily not a drop more blood lost with chloroform than without it. So it will be with other supposed cases, we doubt not. But at present it is undoubtedly a disadvantage that we do not accurately know in what cases it ought to be prohibited.

Our readers will find the results of Dr. Murphy's experience of chloroform in his pamphlet, and much information besides. It is peculiarly valuable just now, from the enlarged experience and calm judgment of the author, who is as little likely as any one we know to patronize that species of animal called a "hobby."

He observes:

"The influence of chloroform on parturition is, in a practical point of view, our most important consideration; and as far as his

present experience of this anodyne extends the writer is led to the following conclusions:

"1st. It does not interfere with the action of the uterus, unless it be given in very large doses, which is never necessary.

"2nd. It causes a greater relaxation in the passages and perinæum; the mucous secretion from the vagina is also increased.

"3rd. It subdues the nervous irritation caused by severe pain, and restores nervous energy.

"4th. It secures the patient perfect repose for some hours after her delivery. These three last effects consequently render an operation much easier to perform, and the recovery of the patient afterwards much more favourable.

"5th. The order of its effects on the vital functions seems to be —loss of sensation—partial loss of voluntary motion—loss of consciousness—complete loss of voluntary motion—stertorous respiration—loss of involuntary motion—cessation of the action of the uterus—of respiration—of the action of the heart.

"6th. Its injurious effects, when an ordinary dose is given, seem to depend on constitutional peculiarities, or on improper management. Much excitement about the patient may render her violent. Catalepsy has occurred in some; clonic contractions in others. Some patients are slow in recovering from the effect of a large dose; they remain giddy during the day, and sometimes faint when they stand upright.

"The writer cannot say whether it hastens the dilatation of the os uteri. In one case where it was given, it did not seem to do so; but he can readily imagine, that when the progress of this stage is retarded by the irritability of the patient, and her dread of pain, chloroform, if prudently administered, would be a most valuable means of removing this interruption to labour.

"The purity of chloroform is of the last importance. If mixed with alcohol it irritates the skin and excites the patient. At first, this preparation was confounded with chloric ether, which had all the exciting properties of sulphuric ether.

"In order to test the purity of chloroform, Soubeiran proposes a mixture of equal parts of strong sulphuric acid and water; and when cool, a few drops of chloroform poured into the fluid, ought to sink to the bottom if sufficiently pure for medical use; but if they float on the surface, the chloroform should be rejected."

We regret much that our limits necessarily prevent our entering into more lengthened detail on this most important and interesting subject; the most important improvement in midwifery—if further experience confirm the past—since Chamberlen's invention of the forceps.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

REPORT

ON THE PROGRESS OF OPHTHALMIC SURGERY, FOR 1847.

With Original Cases and Illustrations.

By W. R. WILDE, M. R. I. A.

SURGEON TO ST. MARK'S OPHTHALMIC HOSPITAL.

THE only special works upon ophthalmic surgery which we have received since the publication of our last Report, are Mr. Jones's Ophthalmic Medicine and Surgery(*a*); the American edition of Mr. Lawrence's Treatise on the Eye(*b*), with the illustrations, notes, and additions of Dr. Hays, of Philadelphia, making it one of the most complete works of the kind in our language; and M. Desmarres' *Traite des Maladies des Yeux*(*c*). To these we shall refer in the course of this Report.

Of the *National Peculiarities* of the eye we have spoken at some length in our Report last year; and we have not much to add on the present occasion. In Colonel Hamilton's Smith's interesting work on the Natural History of the Human Species we find a plate illustrative of this subject, showing the form of the eye-lids in four different races, with this description:—"Those from Canton northward and westward have the gland of the eye covered by the lid and eye-lash turning over it, which increases to its maximum among the black Kalmucks, whose eyes are turned obliquely downwards more than any other race, and whose skin is not yellow, but

(*a*) A Manual of the Principles and Practice of Ophthalmic Medicine and Surgery. By T. Wharton Jones, Lecturer on Anatomy, Physiology, and Pathology, at the Charing Cross Hospital, &c., &c. London, Churchill. 1847. Small 8vo., plates, pp. 570.

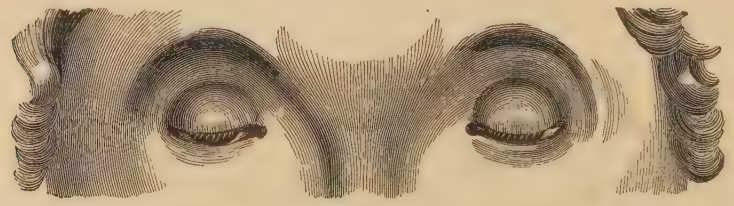
(*b*) A Treatise on Diseases of the Eye, by W. Lawrence, F. R. S., Surgeon Extraordinary to the Queen. A new edition. Edited, with numerous Additions and 167 Illustrations, by Isaac Hays, M. D., Surgeon to Wills' Hospital, Philadelphia. Philadelphia, Lea and Blanchard. 1847. pp. 859.

(*c*) *Traite Theorique et Pratique des Maladies des Yeux.* Paris, 1847. pp. 900.

ashy."(*a*) By the gland of the eye we suppose the author means the caruncle. We think the drawings, however, greatly exaggerated, particularly that of the Kirguise, where the internal angle of the upper lid is made to overlap the lower. The obliquity spoken of arises in part from the peculiarity of the orbits, but is chiefly owing to obliquity of the lids, and not to any irregularity of the globes.

CONGENITAL MALFORMATIONS.

In our articles upon this subject in the twenty-seventh and twenty-eighth volumes of the former series of this Journal, we enumerated among the defects of the lids and ocular appendages, the disease denominated *congenital ptosis:* and also *phymosis*, or congenital narrowing of the rima palpebrarum. During the past year we have had under our care two very remarkable instances of a peculiar modification of this very curious defect, of which the accompanying illustration affords some idea.



Both instances were adults, a male and female, with fair complexions, sandy hair, and blue eyes, and in neither was there any hereditary predisposition to peculiarity of this description. The globes were well formed, and their contents normal, and vision was perfect, though not very strong; but the eyes seemed sunken within deep cavities, and were scarcely touched by the lids. The idea presented to us at first sight was that of a piece of integument, with apertures cut for the eyes, stretched tightly over an osseous preparation, as the globes made little or no prominence externally. The brows were natural, but deeply-arched and elevated, from the action of the frontal muscles, by which alone the palpebræ were elevated. The upper lids were remarkably small, smooth, and totally devoid of folds or furrows, and they appeared nearly flat from side to side, owing to the very slight projection of the globes. They usually covered the upper two-thirds of the corneæ, and consequently a considerable portion of each pupil, which, from the eyes being so much shaded from the light, was generally dilated. By the action of the occipito-frontalis muscle, the lid can be raised so as to uncover about one-third of the cornea. It is manifest that in these cases there is either total deficiency or complete atrophy of the levator palpebræ. The split of the lid is about half the natural size in the full-grown adult; the ciliæ are

(*a*) Explanation of the plates, p. 458.

natural, but light in colour, and the puncta normal. Without any eversion, both these cases suffered from redness and irritability of the inner edge of the lower lids, for about the depth of the Meibomian glands, owing to the action of the atmosphere upon the mucous surface, which stands out about a line from the surface of the globe. A slight lachrymal effusion generally fills this space. The orbicularis palpebrarum is tolerably well developed, enabling these persons to approximate the lids and close the eyes. From some flattening of the nasal bones and the small palpebral apertures, the eyes at first sight appear to be set too widely apart. Dr. Mackenzie says he has met with "a degree of depression of the upper lid so considerable as to materially impede the function of vision, and which had existed from birth; in some of these cases the lid was the reverse of being swollen; it rather appeared atrophic, as if the levator muscle had either been originally deficient, or had wasted from disease."(*a*)

Coloboma Palpebræ.—The accompanying illustration affords the best idea of a well-marked case of cleft eyelid which we have yet seen. It is taken from the right eye of a girl aged 14, with dark hair and eyes, none of whose family have had any congenital malformation. The split occurs at the junction of the middle and inner thirds of the lid. In this case we find that there is a complete deficiency in the cartilage, for about a line in breadth, throughout its whole extent; in fact, there are two distinct superior tarsal cartilages, held together by the conjunctiva internally, and the muscles and integuments without. The ciliæ are continuous, but somewhat shorter within the cleft. Upon everting the lid, the split is very manifest, and externally the finger sinks into the deficiency. She experiences no inconvenience from this peculiarity.

A gentleman of our acquaintance has precise y the same peculiar malformation, also in the right eyelid, and in exactly the same place, —the junction between the middle and internal third of the cartilage.

Megalophthalmus, or preternatural enlargement of the globe.—We are indebted to Mr. Fleming for a case of this description which fell under his notice in one of the temporary fever hospitals. The boy, now seventeen years of age, has brown hair, and dark hazel eyes. The right eye is natural in every respect; the left is nearly twice the size of the right, and very defective in vision, but perfectly natural, and to all appearance healthy in its coats and hu-

(*a*) Mackenzie on the Eye, third edition, p. 181.

mours. From all its parts being in proportion to one another, it presents one of the best instances of pure buphthalmia, or congenitally enlarged eye, which we have yet seen or read of. The pupil is perfectly sensible to light, and the lachrymal appendages normal.

A case of the *Congenital Absence of the four Puncta*, in a barrister in Paris, aged 25, has been related by M. Blanchet, who has succeeded in establishing a punctum in communication with the lachrymal duct upon the right side(*a*).

Scarcely a year passes that we do not read of cases of opacity of the cornea presenting at birth, and arising either from an arrest of development of this membrane during an early period of fœtal life, or the supervention of inflammatory action in it *in utero*, as we have already explained in our second essay upon the malformations and congenital diseases of the organs of sight(*b*). A case of *Corneal Opacity*, apparently the result of the former cause, and accompanied by deficiency of the iris, has been lately recorded by M. Tavignot, in a child eighteen months old. The globes were natural in size, but somewhat too spherical in form. There was convergent strabismus, with nystagmus, in both eyes. The corneæ were natural in size, but the left presented an uniform opacity, except around its sclerotic attachment, where there was a small transparent zone. In the right cornea the opacity occupied about one-third of its extent, and was confined to the centre. There was in this case some approach to that peculiar condition of opacity sometimes seen in middle and advanced life, and to which has been given the name of arcus senilis. The iris was almost totally deficient in both eyes. There was some vision, but considerable photophobia(*c*).

M. Desmarres, in his recently published work upon the eye, has devoted considerable space to the congenital deformities; but his knowledge upon this subject is chiefly derived from the celebrated work of Von Ammon, of Dresden(*d*), and he does not appear to be at all acquainted with the writings of Englishmen who have alluded to these vices of conformation.

Dr. Texon relates three cases of *Irederimia, or congenital absence of the iris.* In all there was partial ptosis, or a peculiar drooping of the upper lid, so as to cover a portion of the cornea, and thus act as a shade, like the lids of the chameleon. The bottom of the eye appeared dark brown or black, and in one case, in a strong light, there was seen deep in the eye a brilliant reflection, giving it a luminous red appearance, like a ruby(*e*).

Hereditary Absence of the Iris.—Dr. Stoeber, of Strasbourg, whose researches upon the congenital malformations of the eye we

(*a*) *Gazette Medicale* for 1st May, 1847.
(*b*) The Dublin Journal of Medical Science, vol. xxviii. for 1845, p. 86.
(*c*) *Gazette Medicale* for July 27, 1847.
(*d*) *Klinische Darstellung der Angebornen Krankheiten.*
(*e*) *Annales d'Oculistique*, January, 1848.

have heretofore had occasion to notice, has lately recorded an instance of iridcrima in both the father and son. The child was two months old; the deficiency existed in both eyes. The same deficiency existed in the father, who from this cause was never able to read(*a*).

Mr. France has made a second notice of the case of *Iridcrimia* recorded by Mr. Willesford in the fifteenth volume of the London Medical Gazette. The girl, now aged 17, has, it appears, lost vision since her case was originally published; owing, it would seem, to the sensibility of the retina having, by long exposure to too much light, become blunted. Mr. France gives the following statement of her appearance in June last(*b*) :

" The girl's complexion, as before mentioned, is dark, and the hair, eye-brows, and eye-lashes, which are plentiful, are black. The globes are altogether ill-developed, perhaps two-thirds of the average size for an individual of this patient's age ; they are affected with continual oscillatory motion; the openings of the palpebræ are short, but not disproportionate to the bulk of the eye-balls.

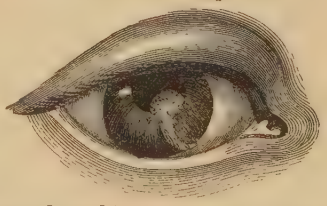
" The cornea of the right eye is much smaller than usual, its centre hazy, and the surface of the hazy part scabrous; the sclerotic, of much less capacity than ordinary, appears otherwise healthy, and possesses a due degree of tension. The iris is totally deficient, except towards the temporal side, where a narrow rudiment of the membrane exists, presenting a diameter of about a line at the broadest part, and extenuating itself to a point at either extremity ; it thus constitutes a narrow crescent of light brown colour, the only septum between the chambers of the eye ; for, with this exception, the entire space behind the cornea appears uniformly black.

" The cornea of the left eye is very small, with a nebulous centre, where the surface is irregularly flattened. The sclerotic is of corresponding size, but otherwise healthy. In this organ, likewise, the sole vestige of iris consists of a narrow, light brown crescent, confined to the temporal side ; and the observer looks uninterruptedly through the remaining space to the dull, black fundus of the eye. In neither globe is there any appearance of cataract ; yet in neither are the deeper reflected images of a candle discernible upon catoptrical examination ; a circumstance owing, probably, to the irregularity and central haziness of the surface of the cornea. Intolerance of light is by no means considerable in the ordinary uninflamed condition of the eyes; but the patient continues subject to slight attacks of ophthalmia, productive of troublesome photophobia. Vision, which is most imperfect with the left eye, is sufficient to enable the patient to find her way about accustomed places, and to execute a little coarse work ; but she cannot thread a needle, or pick up a pin from a light-coloured surface ; and at dusk her visual powers are still more deficient. No other member of the family, parent or child, is similarly affected."

(*a*) *Gazette Medicale de Strasbourg.*
(*b*) Ophthalmic Cases in Guy's Hospital Reports, vol. v., for 1847, p. 30.

Congenital Amblyopia.—The peculiar optical defect which exists in Professor Airy's eye, and which he described in the Cambridge Philosophical Transactions some years ago, under the name of *Astigmatism*, has also occurred in the person of Dr. H. Goode, who has lately written an article on the subject. To remedy this defect it is proposed to use a lens plane on one side, and a section of a cylinder on the other. Glasses of this description are said to be best made by M. Chamblant of Paris, who also constructs lenses suited to Dr. Goode's eye, viz., with cylindrical surfaces, the axes of the two surfaces crossing at right angles(*a*).

Korestenoma.—Von Ammon has applied this term to that peculiar vice of conformation in which there is a preternatural projection of the iris within the circle of the pupil at any one part. It is one of the rarest forms of congenital malformation of the eye. In the fourth volume of that valuable periodical, the Quarterly Journal of Medical Science of Prague, we find an interesting account of a case of this description, by Dr. Victor Szokalski, accompanied by a well-executed illustration, from which the wood-cut here represented is copied. The subject of this malformation was a girl of a scrofulous constitution, born with hare lip, and said to be affected with syphilis. The irides were light blue, and in each iris was observed a light yellow stroke of a conical shape; it arose broad from the border of the pupil, and extended obliquely downwards and inwards to the ciliary margin. In the right eye, however, its upper edge formed a rounded, wart-like protuberance, which projected into the pupil, and occupied about half the size of that aperture in its moderately dilated state, and also extended into the anterior chamber. It was covered with minute hairs. The other parts of the eye were normal. While the ordinary discolouration of the iris, which this resembles, has been accounted for on the belief that it is an early cicatrix of this membrane, no plausible hypothesis has yet been advanced which will explain this peculiar fault in the formation of the ocular diaphragm(*b*).



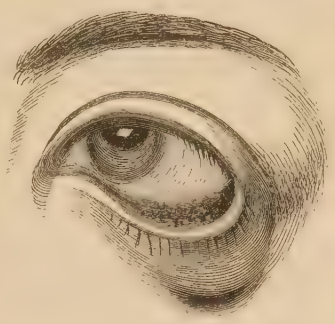
A case similar to this is reported to have occurred in the practice of the venerable Walther of Munich. The fact of the case related by Dr. Szokalski having been mistaken and treated for syphilitic iritis with lymph effused on the surface and border of the iris is in itself a sufficient proof of the necessity of the profession being made acquainted with all these vices of conformation.

Mr. Allen has lately recorded the case of a cyclops monster, but he has omitted all notice of the dissection of the eye(*c*).

(*a*) Monthly Journal and Retrospect of Medical Science for April, 1848.
(*b*) *Vierteljahrschrift für die praktische Heilkunde* III., *Jalugang*, 1846. *Vierter Band.* Prag.
(*c*) Lancet for February 26, 1848.

DISEASES OF THE EYE-LIDS AND LACHRYMAL APPENDAGES.

Ectropion.—We have very little to record on this subject. The following case, which we treated in the year 1844, by a new method of operating, possesses sufficient interest for its insertion here. The subject of the deformity represented in the accompanying illustration, a girl aged fourteen years, had a scrofulous abscess over the malar bone, near the edge of the orbit, when about five years of age. A small portion of bone had exfoliated; the integuments became inverted during the subsequent healing process, so that the skin and periosteum were intimately united. By this means the lower lid was drawn down from the globe, and its outer portion greatly everted. The conjunctiva presented the usual red villous appearance which it assumes when thus exposed for any length of time. When first examined we found the integuments so intimately attached to the bone, that it did not seem possible to insert anything between them. For upwards of a fortnight the patient, by our directions, rendered the parts more moveable by drawing the adjoining skin in different directions, so that some cellular membrane seemed thus to have been felted, as it were, between the bone and the thin layer of skin by which it was covered. A small narrow-bladed and double-edged knife, such as that used for the subcutaneous section of tendons, was then introduced at the distance of nearly an inch on the outer side of the cicatrix, passed obliquely down to the bone, then pushed forward to the outer angle of the attachment, at which period of the operation the parts both above and below the cicatrix were made as tense as possible, and stretched forwards, while the point of the knife, its flat surface being laid upon the bone, was moved in a semicircular manner from above downwards, and at the same time pushed forward, until the entire adhesion, and for nearly half an inch on each side of it, was fully detached from the bone. As soon as it was found perfectly free, and that the lid could be restored to its normal position, the knife was withdrawn, and the small wound closed with adhesive plaster. The effusion of blood which immediately took place beneath the cicatrix caused a tumour where the depression had existed, and care was taken that none of this blood should escape through the external aperture. A ligature was then passed through the lower lid, about a quarter of an inch from its ciliary margin, and the ends of it drawn up and attached to the forehead during the next three days. Cold applications were applied, and we had the satisfaction to find that, within a fortnight afterwards, the deformity was completely removed, the depression of the cheek filled up, and the lid



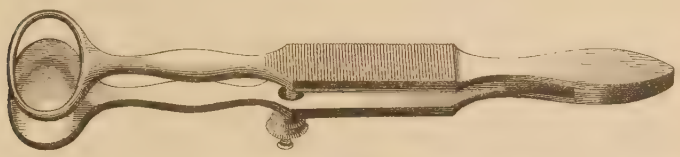
restored to its natural position. The thickened conjunctiva, however, required the application of the sulphate of copper for some time afterwards. At present it is scarcely possible to trace where the deformity existed. This case is not only interesting in itself, but the means by which it was removed afford us a valuable hint in the treatment of similar deformities elsewhere.

Follicular Tumour of the Caruncle.—The accompanying illustration affords a tolerably correct idea of this rare form of disease, which closely resembles benign encanthus. It occurred in a girl aged eighteen years when this drawing was taken, about two years ago. An oblong, fleshy mass occupied the internal angle of the right eye, projected over the commissure, and lay between it and the nose. Upon close examination it was found to be minutely lobulated on its surface; it was not very sensitive to the touch; and on raising it up and drawing it forward, it was found to be attached both to the lower edge of the caruncle and the conjunctival lining of the inferior lid; but that it was not a mere enlargement of the caruncle itself was manifest, from a portion of that body being distinguishable behind and above it: the second root was situated between the punctum and the extremity of the inner angle of the lids. The tumour was polished on its surface, and totally devoid of hair. The patient stated that the disease had existed for many years, but, except the deformity, gave her very little inconvenience till latterly. It used occasionally to bleed when rubbed, and she says it generally increased in size and depth of colour during the menstrual period. A fine ligature was passed over the tumour, and tightened as far down towards its root as possible, when the tumour assumed a purple colour instead of the bright, florid red which it previously exhibited. After a few hours the tumour was removed with a pair of scissors, at the line of strangulation, and scarcely any hæmorrhage ensued. Upon examination the tumour was found to be chiefly composed of conical eminences, formed of capillary blood-vessels, held together by loose cellular tissue, and covered by an unusually thick layer of epithelium. The resemblance which it presented to the microscopic appearance of condyloma was very remarkable. In the course of a twelvemonth it grew again, and was lately removed.

Anchyloblepharon.—In cases of adhesion of the lid to the globe, M. Dijon passes a lancet-shaped needle across the base of the cicatrix, as deep as possible, but parallel with the margin of the eyelid. Through this aperture he passes a piece of fine silver wire, the extremities of which he joins, and leaves this ring in for fifteen or twenty days, at the end of which time the trajet is free and its sides

cicatrized: he then cuts out the wire. It is found, he says, to answer the purpose perfectly.(*a*)

Tarsal Tumours.—In our Report for last year we mentioned that Dr. Desmarres had invented an ingenious description of forceps for the removal of tumours from the eye-lids, and we described the mode of using it. We stated, however, our objection to its use,—that it was only applicable to the removal of those little bodies by an external incision, a plan few operators will, we think, now agree to. We have, however, taken the hint from our Parisian contemporary; and had an instrument constructed on precisely the same principle, but modified so as to answer the purpose to which we apply it. It is here represented of the actual size.



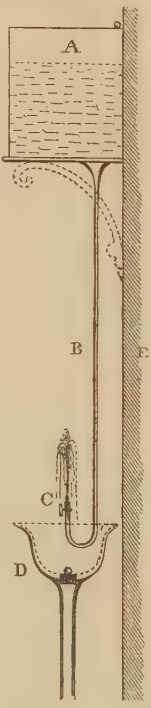
When using it, the ring portion is slipped under the lid, upper or lower, so as to encircle the tumour; the blades are then screwed together with the necessary degree of tightness, and the lid everted. By this means we have the lid fixed,—a perfect tourniquet applied, by which all hæmorrhage is prevented, and, in all probability, pain is lessened, the globe defended, and a point of resistance obtained in the solid blade of the instrument, by which also the tumour is pressed forward. Having opened the sac freely, we turn out its contents into a fine silver spatula, or a Davielle's scoop; then apply a fine probe, pointed with nitrate of silver, over the interior, smear the surface with a little oil, restore the position of the lid, and loosen the forceps. The instrument differs from Desmarres' in the position of the screw, the size and curvature of the blades, and in the mode of its application.

AFFECTIONS OF THE CONJUNCTIVA, CORNEA, AND SCLEROTIC.

Ophthalmia Neonotorum.—In this disease it is said that a new membrane is generated upon the surface of the conjunctiva, in the same manner that adventitious membranes are thrown out on the lining of the larynx, and upon that of the pharynx and isthmus faucium in diphtherite; and this, it is said, is what causes the rapid destruction of the cornea in these cases. The existence of this membrane is yet problematical. The conjunctiva is not prone to effuse lymph upon its external surface, but probably, under certain circumstances, it may do so. A case has lately been recorded by M. Bouyson, in which, during an attack of very severe purulent ophthalmia, a series of pseudo-membranes were formed upon the chymosed conjunctiva, which protruded between the lids; but in this instance the conjunctiva had been previously incised to relieve the distention, and we are not quite sure that the effused membrane was not poured out

(*a*) *Gazette des Hopitaux* for Dec. 2, 1847.

from the cut surface of the mucous membrane. The lining of the mouth occasionally pours out lymph in large quantities, so does the external surface of the membrana tympani and the distal extremity of the external auditory passage, and it is possible that the mucous membrane of the eye may do so likewise; but the matter requires further investigation. M. Chassaignac, the discoverer of this pseudo-membrane (so called) in purulent ophthalmia, recommends the continual irrigation of the eye, by what he terms *Ocular Douches*, in order to wash away the membrane as often as it is produced. To effect this the child is laid upon a table, while a small stream of water(*a*) is made to play on the eyes, for several minutes together, frequently during the day. This mode of treatment is not so novel as the French surgeon believes. In the Dublin Lying-in Hospital, many years ago, the nurses of certain wards became so famed for their good management of purulent ophthalmia, that whenever a severe case of this description occurred in the institution it was immediately transferred to their care. The management consisted in the continual removal of the discharge, and the frequent cleansing of the lids by means of a fine sponge and lukewarm water. The plan pursued was to lay the child across the knees, and to let the water pour out from the sponge over the eyes, the lids of which were held gently apart(*b*). M. Chassaignac likewise informs us that these douches have been found highly efficacious in the removal of corneal opacities which had resisted the ordinary methods of treatment. The projection of a stream of water of different temperatures against the eye, both as a means of cleansing it from impure discharges, and as a most grateful method of relieving pain and irritation, has been employed in the Ophthalmic Clinique in Vienna since the days of Beer. We have lately established douches of this description in St. Mark's Hospital, and as we think they will be found highly efficacious in similar establishments elsewhere, and should be employed in every hospital where diseases of the eye are treated, we give the accompanying illustration. Moreover, by this means the possibility of conveying infectious matter from one patient to another, by means of sponges, &c., will be in a great measure avoided. In this section, A represents a zinc or tin cistern capable of holding from three to four gallons of water, and which is fastened to the wall of the ward or waiting-room. It is open at the top to allow of its being filled, but closed by a well-adapted lid, in order to exclude all impurities. A funnel-shaped zinc tube, furnished with



(*a*) *Revue Medico-Chirurgicale*, September, 1847.

(*b*) See Dr. Evory Kennedy's paper upon the Purulent Ophthalmia of Infants, read at the meeting of the British Association in Dublin, in 1835.

a fine strainer, is attached to its bottom. This ends in a pipe B of quarter inch bore, which is also fastened against the wall, and bent into the curve here represented. This is furnished with a stop-cock at C, and its extremity is so constructed as to permit of several descriptions of tubes and roses being attached to it. This curve is about three feet and a half from the ground, so that a person of middle stature may be within reach of the jet of water when stooping his head over it. D is a zinc basin furnished with an ordinary plug and waste-pipe, into which the water falls, and which may be also used as the usual washing basin of a ward. The cistern can be filled with either hot or cold water as the occasion requires, and in large establishments it may be connected with the ordinary forcing apparatus. The strength of the stream or jet can be regulated by the stop-cock.

Scrofulous Ophthalmia.—The irritability of the Schneiderian membrane in this disease, and the sneezing and other phenomena which it so frequently presents, are well known to every practical surgeon, yet, until lately, the actual condition of the mucous membrane lining the nose has not received much attention. M. Morand has lately directed particular notice to this circumstance. He says: "In scrofulous ophthalmia the olfactory membrane participates with the conjunctiva in the inflammation that is set up; that it is especially about the turbinate bones, and in the anfractuosities of the nasal fossæ, that the inflammatory action resides; and that this shows itself in the form of an œdematous engorgement, precisely similar to what is observed in the eye-lids. The more I study this disease, the more convinced am I that this is the case. A little attention suffices to show that the redness and tumefactions of the pituitary membrane almost always precede or accompany that of the conjunctiva. This can be more positively determined by means of the speculum auris. On examining attentively the interior of the nasal fossæ, one cannot fail to observe that the redness and swelling of the nostrils, and even of the upper part of the lip, that are so commonly observed in persons of a scrofulous habit, are merely an evidence of the inflammatory action going on in that membrane. It is by proceeding in this way that we can best appreciate the degree and extent of this inflammatory action, the extension of which to the palpebral and ocular mucous surfaces is often very rapid; sometimes, however, it remains for a long time stationary, without showing any disposition to extend." For the relief of this disease M. Morand applies the nitrate of silver, either in substance, solution, or ointment, extensively over the surface of the pituitary membrane. The value of this remedy has been extensively attested by Dr. Edwards of Bath, and, according to his experience, with the most decided benefit, even in cases of long standing, and where other remedies had failed(*a*).

Granular Conjunctiva.—Except in Egypt, we have never seen so

(*a*) Lancet for April, 1847.

many instances of what are termed granular lids as in Ireland. The cause of this it is as difficult to explain as it is why syphilitic diseases, with a breach of surface, are so prone to spread and run into phagedenic sores, in one part of Europe, and to throw out condylomatous excrescenses in another, for instance, in Southern Germany. The fact as to the peculiar disposition which the conjunctiva, particularly of the upper lid, has to become granular, either during the progress of, or as the sequel to the ordinary ophthalmiæ, among the lower orders in this country, is well known to practitioners. In certain subacute forms of ophthalmia, particularly among the ill fed, badly housed, and poorly clad artisans and labouring population of this city, this granular condition can often be observable at a very early stage of the disease, when the villi upon the palpebræ become developed, like a kind of nap, upon the surface of the cartilage. The conjunctiva may be intensely red, but still shining and polished, and presenting distinct vessels. As soon, however, as the villi become developed in its first stage towards granulation, these vessels are no longer distinguishable, and the surface presents a dull red hue, and, when it is examined with the lens, presents a roughened velvety appearance. From this to the stage where the surface of the upper lid, in particular, resembles a ripe raspberry, with distinct nail-headed granulations of several sizes, the appearances have been already described in books. It is to such cases, which are often met with in discharged soldiers, that we would now draw attention. Having frequently remarked that in cases which had recovered from granular lids, the surface of the conjunctiva covering the cartilage presented a number of white furrows or cicatrices, crossing one another in different directions, it occurred to us that if those could be produced artificially, it would hasten and facilitate the removal of the disease. When, therefore, upon the lid being everted, a few of these granulations, with narrow pedicles, present above the rest, we remove them rapidly with a curved scissors, and also as many as stand out at the line of reflection of the everted cartilage, where they are usually very abundant. And then, or in cases where such peculiarities may not present, we make a number of incisions through the granular surfaces, down to the cartilage, with a small round-pointed knife, like an old-fashioned dinner-knife. These incisions should commence below, in order that the blood may not obscure the operator's vision, and run the whole length of the cartilage. Four, at least, of these should be made, and they should be crossed by a number of cuts, drawn from above downwards, nearly perpendicular. By this operation a description of "firing," like that which is performed upon horses, is put in practice. The lid should be kept everted as long as the patient can bear it, in order to promote the hæmorrhage, which is often considerable. The next day, upon examining the part, it will be found very much paler, and the granulations sunken and flabby, particularly along the line of the incisions. We then rub the surface of the lid, and particularly the incisions, with a smooth, heart-shaped crystal of

sulphate of copper, taking care to insert it likewise under that portion of the lid behind the angle of reflection, which cannot be well exposed to view, for there the granulations are generally most abundant, and often remain and keep up irritation long after those lower down upon the lid have been cured. The surface of the lid should then be well oiled, as this lessens the subsequent pain very much. By these means, firing the lids every fourth or fifth day, and applying the bluestone on the alternate days, we have succeeded in curing cases of the most inveterate granulations. At the same time, constitutional treatment should not, by any means, be neglected; and among the strengthening medicines which we possess, cod-liver oil seems here particularly efficacious. In some cases the application of a single leech to the internal surface of the upper or lower lid every second day will be found very effectual; and, thus applied, leeches do not usually produce that œdema and erysipelas to which some persons are so liable, but great care must be taken that the leeches are not allowed to adhere too near the edge of the lid, where the wound which they make is often very annoying.

The following *Method of Applying Sulphate of Copper* in the granular state of the upper eye-lid we have employed for some years; it will be found much more efficacious, less painful to the patient, and much more easily applied than the ordinary mode of proceeding. The piece of bluestone should be shaped somewhat like a spade in cards, with a blade about three quarters of an inch long, and filed down to the eighth of an inch in thickness. It should be fastened by its shank in a large quill, and occasionally rubbed smooth with a little water, to keep its edge and surface even. When about to be used, the lid need not be everted, but slightly lifted off the globe, by drawing the integument upward against the brow in the usual manner, and then the piece of bluestone may be inserted underneath the lid, towards the internal side, as high up as possible, and held a little out from the eye, so that it does not touch the surface of the globe. It is then drawn downwards and outwards towards the external angle. It is astonishing with what facility this manœuvre, after a little practice, can be accomplished, and what little uneasiness it causes the patient. Moreover, by this means we at once reach those large flabby granulations which are seated high up towards the reflection of the conjunctiva from the globe, and where, owing to there being less pressure exercised upon them, they grow much larger than anywhere else.

Dr. Clay Wallace, of New York, recommends a solution of six or eight grains of chloride of gold to an ounce of water, for the removal of granulations on the mucous membrane of the lids. "In recent cases," he says, "the chloride of gold is inferior to the nitrate of silver in curative effects, and it occasions far more irritation: in chronic thickened lids, on the other hand, it is vastly superior."(*a*)

Dr. Hays, in his commentaries on Mr. Lawrence's work, says

(*a*) The Boston Medical and Surgical Journal, November 3, 1847.

that "a very large proportion of the applicants for admission into Wills' Hospital labour under this disease; and the treatment which they have undergone, as well as the statement of several patients, lead us to infer that physicians, generally, are not as well acquainted with the complaint as it is desirable they should be. Two years ago we were led by the favourable reports of the efficacy of iodide of zinc, in reducing enlargement of the tonsils, to try this application in cases of greatly thickened conjunctiva of long standing, which had proved rebellious to various remedies. The result was so satisfactory that we have since employed it in a few similar cases, and our experience thus far authorizes us to recommend this remedy to the attention of the profession." In using this remedy, it is necessary to evert the lids, and wash off the caustic with some tepid water and a fine sponge, immediately after its application. When the eye is irritable, and there is much lachrymation, the author recommends a cold salt-water bath to the eyes. The douche, described at page 476, will prove a useful mode of applying this.

Mr. Wharton Jones's work contains several useful though brief remarks on the subject. He says: "The ocular conjunctiva does not become granular, as the palpebral conjunctiva does, seeing that it does not possess a papillary structure, similar to that which, in the palpebral conjunctiva, forms the peculiar seat of granular prominences. Any granular appearance which may be presented by the sclerotic, or corneal conjunctiva, is owing to real granulations." He very properly lays stress on the necessity of examining the state of the internal surface of the upper lid in all cases of chronic ophthalmia. It is astonishing with what rapidity granulations will form, in some cases, and in some constitutions, even in the acute stage. In the epidemic of post-febrile ophthalmia, which we had lately in this country, when the disease was seated in the external tunics of the eye, a granular condition of the entire palpebral conjunctiva often formed in a few days, the granulations being of a dusky red colour, large, and flabby. The patients in these cases generally had had one or more relapses of fever, and one of the most remarkable and constant symptoms in the disease, both when it presented as an external ophthalmia, chiefly affecting the conjunctiva and sclerotic, and also when it seized upon the internal structures, and was accompanied by defective vision, was a feeling of pressure upon the upper surface of the globe, as if the finger was buried deeply beneath the edge of the orbit. "In the treatment of granular conjunctiva," continues Mr. Jones, "care and perseverance are required, carefully conducted diet and regimen; tonics, good air, and protection from changes of weather, are important general points of treatment. The local treatment should consist of, first, the application of a leech or two to the eye-lids, occasionally, to relieve congestion; second, counter-irritation kept up by repeated blisters to the nape of the neck; third, scarifications of the affected conjunctiva, every second or third day, and immediately thereafter, the application of some strong salve, such as red precipitate. If the

granulations are large and prominent, instead of simply scarifying them, they may be shaven off with a lancet-shaped knife, or if pedunculated, they may be stripped off, one by one, with curved scissors."(*a*) In another place the same author says : "A mode of scarification which I have employed with advantage, consists in making a small crucial incision through each granulation, or, when they are small and closely compacted, by making a number of cross hatches."(*b*) The latter mode of practice strongly coincides with our own operation described above.

M. Desmarres uses caustic pencils of graduated strength, prepared by mixing nitrate of potash with nitrate of silver, in the proportions of one-half, a quarter, and the eighth of the caustic ingredient.

Gonorrhœal Ophthalmia.—In his lecture upon syphilitic diseases, lately published in the Lancet(*c*), M. Ricord recommends the application of the solid nitrate of silver to the affected surface, so as to produce a white film, but not to destroy the tissues ; after which he advises the thorough irrigation of the part, in order to wash off any portion of the salt which may adhere. By this means, he says, the secretion is momentarily suspended, but when the crust formed by the caustic falls off, the pus reappears, though it is then lighter in colour and turns sero-sanguineous. "So long," he says, "as little white streaks, the result of the cauterization, remain visible, and so long as the secretion is not again purulent, you may judge that the influence of the nitrate is continuing; but when the streaks have disappeared, and the secretion re-assumes its primary character, you may infer that the effects of your cauterization are over, and you may then repeat it ; indeed it can safely be used three times a day." He thinks that mercurial friction in the early stage of the disease rather tends to increase than diminish it. When chemosis ensues, he advises its immediate incision; at the same time he thinks that the cauterization should precede the incision. It is in the early stage of this symptom, and when it is merely the result of œdema, that he thinks most benefit can be derived from it, but "when the chemosis has reached the phlegmonous state, it can no longer be excised, you must then have recourse to scarifications, but their effects are very inferior to those of excision. In the interval between the cauterization with the solid nitrate of silver, I inject into the eye, three or four times a day, a weak solution of the same salt." M. Ricord also depletes largely, both generally and locally. While we agree in the general rules laid down for the treatment of this disease by the distinguished author whom we have just quoted, we confess our dread of rubbing the coats of the eye three or four times a day with the solid nitrate of silver. Upon the subject of the treatment of the urethral discharge, during the continuance of the

(*a*) Ophthalmic Medicine and Surgery, p. 177-8.
(*b*) Ibid. page 38, s. 149. (*c*) The Lancet, February 12, 1848.

ocular affection, M. Ricord's observations are worthy of attention. The urethral discharge, he says, no doubt diminishes, but never altogether ceases, when the eye is engaged. He objects to taking pus from another individual in order to reproduce the urethral discharge, because, as he justly says, there may be latent chancres in the urethra which yields the pus, and then an additional misery might be entailed. When the ocular disease has been communicated from the urethral discharge of the same person, he uses copaibia "in order to control the urethritis, as in so doing I remove the chance of relapse as regards the eye."

Intermittent Quotidian Ophthalmia.—Dr. Lohman, during the intermittent fever which prevailed last year, observed the following case. A man thirty-eight years of age was attacked for five consecutive days, at the same hour, by violent pain in the left eye, accompanied with increased flow of tears, redness of the conjunctiva, and some intolerance of light. An hour afterwards the pain extended to the orbital region, and towards evening, about seven o'clock, the symptoms gradually diminished, perspiration ensuing. The next morning no sign of the disease remained. The right eye was not in the least affected. Before the occurrence of the attack each day the patient experienced some uneasiness, not, however, amounting to rigor. Leeches, blisters, and various applications, were tried in vain. The administration, however, of twelve grains of quinine cut short the disease on the sixth day(*a*).

Fatal Tetanus from Injury of the Cornea.—Mr. Pollock has related a case of a man, aged 33, who had received a lacerated wound of the cornea, from the lash of a gig whip. The cornea was completely divided, but there was no prolapsis of the iris. Violent inflammation ensued, and on the evening of the sixth day tetanic symptoms set in; on the ninth trismus was fully established, general tetanus ensuing; he died upon the tenth morning, the globe having previously suppurated(*b*). The case is one of extreme interest.

Rupture of the Cornea.—A case of this description has been lately mentioned as occurring from the extraction of a molar tooth, in performing which the maxillary bone was fractured. It is said that at the moment both sight and hearing were lost, so that we must suppose the shock was very great. The cornea of the eye immediately presented a peculiar livid appearance, and the hernia of the iris suddenly took place through the rent. Violent inflammation appears to have ensued, and a large staphyloma followed. Dr. Duval removed this latter, as well as the protruding chemosis upon the eighth day after the accident, by which means the pain and inflammation were greatly lessened. Both the senses of hearing and tasting were greatly impaired by the accident, and have not since been recovered. These defects are attributed to some lesion of the fifth pair of nerves.

(*a*) *Gazetta Medica di Milano*, February 27, 1847.
(*b*) Medical Gazette, June 4, 1847.

Opacities of the Cornea, Collyria, &c.—In our Report of last year we expressed our opinion pretty strongly on the subject of the various remedies proposed for the removal of specks and opacities on the cornea. The Journals teem annually with the praises of various therapeutical agents, the efficacies of which in such cases are said to be infallible. So long as those notices are confined to isolated cases, recorded by practitioners, who do not treat diseases of the eye on a large scale, and who simply relate that the patient had an opacity of the cornea, without stating exactly what the pathological condition of the parts were, we have no desire to do more than merely enumerate the various panaceas, from brandy and salt to prussic acid. But when we find a surgeon to an ophthalmic institution now extolling the virtues of the latter remedy for the removal of albugo leucoma and nebulæ, we are inclined to examine the cases which he has recorded with some care. The Turnbull delusion of curing cataracts, corneal opacities, staphylomas, and even amauroses, by the vapour of prussic acid, has passed away in this country. Not so, however, in British America. Dr. Howard, of Montreal, has carried thither the hydrocyanic treatment of corneal opacities. It is said that "of eighteen with albugo, twelve were cured and six relieved; of seven with leucoma, six were relieved and one abandoned as incurable." Before we make any further remarks upon these broad assertions, we must here again, as we did last year, distinctly protest against the loose descriptions of corneal opacities under the heads of specks, feathers, nebulæ, clouds, opacities, pearls, leucomas, albugos, cicatrices, and even staphylomas of the cornea, which are daily reported in the periodicals to have been cured. In order to enable us to judge whether the case was one susceptible of cure by time, improvement of the constitution, the ordinary efforts of nature, or the use of local stimulants, we must have it distinctly specified what was the cause of the opacity, through what portion of the substance of the cornea it had proceeded, and whether there was adhesion of the iris to the cornea or not. Until those things are fairly stated by the ophthalmic surgeon, the profession must receive with caution the cures reputed to have been performed by any particular agent, even though the patient may have—as occurred with one of Dr. Howard's—"before returning to Wales, his native country, left a certificate (as a voluntary effusion of gratitude), stating the benefit he had received."(*a*)

M. Laundrau recommends the application of a collyrium composed of twelve drops of tincture of iodine in seventy grains of distilled water, in cases of suppurating and ulcerated cornea, with pus both in the anterior chamber and the laminæ of the cornea; and records one case in particular, in which the purulent matter filled one quarter of the anterior chamber, in which this treatment proved efficacious in causing absorption, after other treatment of an antiphlogistic

(*a*) The British Medical Journal of Physical and Medical Sciences, edited by Dr. Archibald Hall, Montreal.

nature had failed(*a*). The efficacy of the external application of the strong tincture of iodine, in dispersing swellings and causing the absorption of indolent tumours, particularly of a glandular and scrofulous character, is already well known, but we very much doubt its efficacy in the instances cited by M. Laundrau. Depots of matter in the anterior chamber of the eye are of frequent occurrence in this country; and during the past year the number of accidents arising from stone-breaking, to persons not generally in the habit of performing such labour, was greater than usual. When matter forms in the cornea it is either diffused or circumscribed; the latter is generally the result of the ordinary pustule, and when it is discharged an ulcer remains, which may open, as is usually the case, externally, and its contents, with the subsequent secretion, be washed off with the tears and the motion of the eye-lids; but sometimes it opens internally, and then the matter, falling into the anterior chamber, deposits in a crescentic shape between the cornea and the iris; level, as is the property of all fluids, above, and semicircular below, precisely resembling the white appearance seen at the root or posterior margin of the human finger nail,—and hence the ancients gave this appearance in the eye the name of *onyx* or *unguis*. Yet, strange as it may appear, with the exception of the late Mr. Tyrrell, no writer of modern times has properly understood or defined this term; even Mr. Lawrence, although he is quite conscious of the difficulty, and even expresses in words the exact appearance which we have been describing, still retains the old term, as may be seen from the following quotation: "It has been commonly represented that when the cornea suppurates, the effused matter insinuates itself between the laminæ, finds its way to the bottom, and, accumulating at the lower edge, produces there an appearance which has been called *onyx* or *unguis*, from its resemblance to the mark at the root of the nails. I believe that the cornea is too dense to admit of this mechanical sinking of the matter, and cannot say that I ever saw onyx in this sense. I believe that the matter remains in any part of the cornea in which it may have been deposited. The appearance similar to the white mark at the root of the nail takes place where matter is effused into the anterior chamber, that is, in hypopyon rather than in suppuration of the cornea or onyx."(*b*)

It is time that this very general error in ophthalmic writers should be corrected. Suppuration of the lens, or of the iris, or a general suppuration within the globe, or pus poured out from the membrane of aqueous humour, and where, as well as in ulcer upon the back of the cornea, a stream of purulent matter may often be perceived coursing down the back of that membrane, will all give rise to this appearance. In hypopyon, however, the matter is more or less diffused throughout the laminæ of the cornea, and not inaptly resembling purulent infiltration of a limb in certain forms of erysipelatous

(*a*) *L'Union Medicale* for 7th October, 1847.
(*b*) Lawrence on the Eye;—American edition, p. 337.

inflammation. This is very frequently the result of such mechanical injury as a piece of stone or brick striking the cornea smartly; slow but generally-diffused inflammation of all the tissues of the eye usually follows. The organ is more prone to degenerate into suppuration than pour out lymph or run into the adhesive process, as occurs in the more active forms of ophthalmia, or when the wound has been inflicted by some sharp, cutting instrument. The usual practice here is to deplete largely, apply stimulating collyria, and put the patient upon the use of mercury; and even in some instances, where the pus had accumulated to a great extent in the anterior chamber, the cornea has been opened with the hope of relieving pain and letting out the contained matter; all of which practices, the lowering of the system, the employment of mercury, the use of lotions or drops, such as solutions of nitrate of silver, &c., and the meddling with the cornea, are, according to our experience, highly injurious; and we have seen many cases during the past year in which the organ was totally lost while the patient was under the influence of mercury; while, on the other hand, we have successfully treated several cases by the method about to be described, in which the anterior chamber was more than two-thirds filled with pus. The cornea was in a sloughy state, and infiltrated with pus; there was considerable serous chemosis; generally diffused redness of all the tissues; violent pain, particularly in the brow, and greatest at night; mucopurulent discharge from the eye; redness and œdema of the lids, together with a weak state of the constitution; small pulse; cold, clammy skin; paleness and anxiety of the face, and all the powers generally below par. In such a case as this, no matter how produced, we believe that mercury will increase the mischief. Small cuppings of the temple, or the application of a few leeches every second or third day, blistering the brow, and dressing the surface with mercurial ointment and belladonna, regulation of the digestive functions, but, above all, the liberal use of bark, a nutritious diet, and pure air; and as the inflammation lessens, the preparations of potash and iodine will be found effectual. The same observations apply to purulent deposits in the eyes of children labouring under the ordinary scrofulous ulceration of the cornea. In these cases the syrup of iodide of iron is an exceedingly efficacious and easily taken medicine.

Abscess in the Iris.—We have lately had in St. Mark's Hospital two cases of injury of the cornea from splinters of stones, which presented, on admission, all the symptoms above described. Upon the pus clearing off so as to permit the lower segment of the iris to be examined, it was found to present the rare appearance of abscess in the substance of its tissue. An open ulcer from which pus was discharging was plainly visible upon

the iris; and one of these cases, that of a man aged 35, presents, now that all the inflammatory action has subsided, the peculiar puckered yellowish white cicatrix of the iris which is represented in the accompanying illustration. The injury inflicted upon the cornea in this case occurred toward the upper portion, where a small leucoma, with attachment of a portion of the pupillary margin of the iris, still remains. The general haziness of the cornea is clearing off daily; there is some vision remaining, and the form of the eye is perfectly natural. The iris could not possibly have received an injury at the place where this cicatrix is situated.

Acupuncture for the Removal of Corneal Opacities.—The foreign Journals have been occupied during the past year with the details of cures said to be effected by this agent, which has been particularly recommended by M. De la Flor, whose claims, however, to originality in its introduction have been disputed. The mode of treatment consists in introducing an ordinary acupuncture needle, previously dipped in a solution of prussic acid, into the cornea, within half a line of the sclerotic, at the superior and transverse diameters of the eye, consequently at four points ; and allowing the needles to remain in for from two to five minutes. The needles are introduced sometimes nearly as far as the laminated cornea, sometimes as far as the aqueous humour, and in other cases to the lens, by which we suppose the reporter means completely into the anterior chamber. Upon withdrawing the needles reaction and inflammation is to be met by the ordinary means in such cases(*a*). We have not tested this novel mode of treatment, nor are we sanguine in our expectations of it. It is possible, however, that the new action thus set up may excite absorption, and thus assist the removal of opacity. We have seen cases of corneal opacity of long standing, which were very much diminished after a smart attack of inflammation.

Cure of Corneal Opacity by Abrasion.—M. Szokalski says he has succeeded in removing opacity of the cornea by scraping its central portion with a knife, as a piece of paper is scraped to remove an ink stain. He repeats the operation several times, removing very little each time, so as not to induce inflammatory action, and he never scrapes the membrane near its circumference, for he is of opinion, that the central portion bears mechanical lesion much better than the circumferential(*b*). Herr Gultz of Vienna, some years ago, recommended, and also practised the operation of shaving off the external laminæ of an opacity, so as to get down on the elastic cornea, which is seldom injured or opaque..

Anæsthesia in Ophthalmic Practice.—We have on more than one occasion, both with reference to *ether* and *chloroform*, stated our opinion upon the value of this practice in ophthalmic surgery, and we have given both agents a sufficient trial. In painful or pro-

(*a*) *Gazette Medicale* for 29th May, 1847.
(*b*) *L'Union Medicale,* March, 1841.

longed operations, the removal of an eye-ball, the extirpation of tumours, plastic operations on the lids, ectropion and entropion, we have used them with the usual efficacy in such cases. We have not, however, employed chloroform (and ether is more objectionable) in operations on the globe, because it is unnecessary, might in some cases prove injurious, and in several it is inapplicable. In most operations on the globe a certain amount of volition is necessary on the part of the patient; for instance, in strabismus, after the muscle has been fairly divided, and to all appearance cleanly dissected off the sclerotic, it is possible that some small fibre, particularly at the upper edge of its insertion, may still remain (as indeed we often know it does) and prevent the ultimate perfect success of the operation. Now to assure himself upon this subject, the operator should, as soon as he thinks the muscle has been fairly divided, and all the immediate cause of squinting removed, direct the patient to turn the eye inwards, in order to judge of the result of the operation. If the ability of squinting remains, something further must be done, either by searching for some undivided fibre of the muscle, or applying a ligature, &c., as we directed some years ago. But how are we to judge of this if the patient is unconscious? We do not think the operations for extraction, artificial pupil, reclination, or breaking up of a lens, are at all so painful as to require the employment of an agent to render the subject of them insensible. In extraction we should certainly fear to use it; we generally make the upper section, and the cornea is usually turned upwards during the use of chloroform; moreover, in this case it is also necessary that the patient should retain such consciousness as will enable him to turn the eye in the different directions required. Suppose, however, we complete the operation with success during the state of insensibility, and that a slight convulsion, a spasm or a nervous excitability, seizes the patient upon awaking from the state of unconsciousness, prolapsus of the iris, loss of the vitreous humour, and perhaps complete collapse of the eye, may take place in an instant during this struggle, or the patient may, inadvertently, to use popular phraseology, rub his eye out. There may be, however, cases in which a state of insensibilily may be beneficial during the performance of such delicate operations.

Dr. Mackenzie recommends the employment of ether (and, we presume, of chloroform on the same principle), in the treatment of various forms of ophthalmia, particularly where there is much photophobia. In the cases where these means was employed, the immediate relief to the distressing intolerance of light was very manifest; but it does not appear to have produced any material alteration in the progress of the disease(*a*). Dr. Smith of Cheltenham has also written on the same subject(*b*); and says that he has employed this means largely to enable him to examine and manipulate on the eyes

(*a*) Medical Gazette, June, 1847. (*b*) Idem, October 15, 1847.

of young children affected with strumous ulcerations, &c. Dr. Smith very justly remarks, that the state of insensibility is much more eaaily produced in young children than in adults. We have not, however, experienced such difficulty in the examination of ophthalmic cases, or the application of remedies, as to require the use of the means recommended by this writer.

Foreign Bodies in the Eye.—M. Petrequin, whose investigations we alluded to in our last Report, has lately enlightened the profession by an article on the best mode of removing foreign bodies from the eye, for which purpose he recommends camel-hair pencils, magnets, lancets, and probe-pointed bistouries, &c., as well as injections of rose-water, all which come under the same category as the various collyria recommended from month to month. When a foreign body, such as a bit of coal or metal, sticks in the cornea lining the upper lid, it is easily removed by everting the lid. When adhering to the cornea the only instrument which we ever find necessary for its removal is a sickle-shaped cataract needle, in shape somewhat resembling that which we described at page 98 of the last Number of this Journal. It is unnecessary to advert to the mode of using it, or to enter at any length on the subject here. Every ophthalmic surgeon, particularly in large towns and manufacturing districts, has ample experience in treating these accidents. Notwithstanding the armamentarium recommended by the Montpelier surgeon, those small portions of iron which fly from the over-tempered steel picks used by millers in dressing millstones, or which are projected against the eye in turning metal, &c., are constantly removed by the workmen themselves, with a small piece of quill cut like a pen, which is kept in the establishment for the purpose. Mr. Bowman, who has lately investigated the structure of the eye with great attention, and who has discovered an *anterior elastic lamina*, like the membrane of Decimet, which lies immediately under the conjunctiva(*a*), states that "the existence of this lamina will help, I think, to explain what must have often puzzled surgeons, viz., the tenacity with which small particles of steel, or other sharp angular fragments, stick in front of the cornea, or just within the surface. These will often remain for many days, or even weeks, and prove the cause of much inflammation, and yet be still found difficult of extraction, which could hardly be the case if the laminated tissue and the conjunctiva epithelium were the only textures in which such particles could be imbedded."

Corneitis.—We were somewhat surprised when we read an article a couple of years ago in the Edinburgh Medical and Surgical Journal, in which the inflammatory diseases of the cornea were described by the author as if they were unknown to the profession; and our attention is again directed to the subject by a lengthened

(*a*) See Todd and Bowman's Physiology, and Mr. Bowman's Lectures, published in the London Medical Gazette for October and November, 1847.

review of Desmarres' book, which has recently appeared in Dr. Ranking's Abstract, in which the writer states that the French oculist's description of punctiform corneitis is so novel that it has been given in a condensed form in the extracts published in that work. Desmarres enumerates a superficial and deep-seated form of this disease, but it is unnecessary to enter at any length into his descriptions. The disease consists in inflammation and consequent thickening and opacity of the membrane of aqueous humour lining the back of the cornea, and extending to the membrane of Descemet, in which the inner surface of the cornea presents a speckled or dotted opacity, as if sprinkled over with a fine bluish-white powder, and which is most easily recognised by examining the cornea in profile, by which means we assure ourselves that the laminated, external elastic, and conjunctival layers of the cornea are not affected. This disease more frequently spreads to the substance of the cornea than to the iris. It is a form of inflammation well known to those who treat diseases of the eye upon a large scale, and has been frequently described by English authors. Mr. Tyrrell has described it under the name of aquo-capsulitis; and to his description, as it happens to be that which is now nearest to our hand, we would refer the reader of the work to which we have just alluded.

Ulcers of the Cornea.—In penetrating ulcers of the centre of the cornea, with prolapsus of the iris, we are told by M. Desmarres that we should not despair of the reduction of the iris unless gangrene of that part has set in. Now what gangrene of a portion of protruded iris may be we confess we are ignorant. While the term hernia is not inaptly applied to this peculiar state of the parts, the surgeon must not suppose that all the changes which take place in a portion of strangulated intestine occur in the iris. When a portion of the iris has protruded through the cornea, either from a wound or ulceration, and become there adherent, the protruding portion of it is not got rid of by gangrene, and it frequently requires to be removed by excision after days and weeks of irritation. For prolapsed iris Desmarres recommends the patient to be kept in a recumbent position, with the head low, and iced infusion of belladonna and hyoscyamus to be applied with light compresses to the eye, and a drop of the same liquid distilled between the eye-lids every five minutes. We strongly object to this opening of the eye-lids every five minutes, as we can conceive nothing more likely to increase the protrusion than this very proceeding. We must here again refer to our observations upon the use of atropine, published in the fourth Number of this Journal for 1846, p. 555. We still believe that the best thing which can be done in penetrating ulcers of the centre of the cornea is to touch the rupture with a weak solution of nitrate of silver applied with a fine camel-hair pencil (but if the iris has protruded it is better to omit this); then to drop into the eye a strong aqueous solution of atropine; to close the lids carefully with a strip of isinglass plaster extending from the forehead to the cheek; to apply the extract of belladonna plentifully in the usual manner all round the external parts; to les-

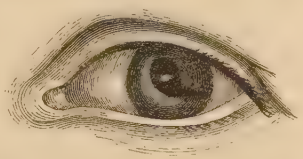
sen congestion and inflammation by local depletion, such as cupping or leeching, &c., and to relieve whatever other urgent symptom may present ; to confine the patient to bed or the recumbent posture ; to enjoin extreme rest, and not to meddle with the eye for forty-eight hours at least. There is a gentleman of our acquaintance who suffered from violent ophthalmia many years ago. His left cornea is quite irregular upon its external surface, and is apparently thinned from previous ulceration. He has had several attacks of sclerotic inflammation, with slight superficial ulceration of the cornea, in both eyes. Upon each occasion the left cornea gave way during a fit of sneezing, coughing, or some similar sudden exertion. The aperture was not like that formed by a penetrating ulcer, but was a rent or tear upwards of a line in length, extending across the transverse diameter of the cornea. On two of the occasions the iris protruded, and once a portion of it had prolapsed for several hours before I saw it; yet, by the treatment above described, he recovered perfectly, with a slight brown mark left by the pigment of the iris upon the back of the cornea.

The transparent ulcer of the cornea has been long known and described ; in some instances, however, we are unable to detect it when we examine the cornea in front, and only become aware of its existence by observing it in profile, or making the patient roll the eye about. There is, however, a symptom attending this form of ulcer with which we have been long acquainted, and which has not, that we are aware of, been heretofore described ; it is the dark shadow thrown upon the surface of the iris by this ulcer, be it ever so transparent or so small, particularly when the patient stands opposite the light. At first view this shadow, which is generally a dark circular spot through which the natural colour and striæ of the iris can be seen, appears like an ordinary congenital mark, but from this it can be distinguished by turning the head or eye from side to side, when it will be seen to shift its place on the surface of the membrane.

Conical Cornea.—Mr. W. W. Cooper has lately paid particular attention to this peculiar disease, and communicated to us the result of his experience. The pathology of this affection, as explained by Mr. Middlemore, and Jäger, of Erlangen(*a*), is, that the alteration in the form of the cornea is caused by the interstitial absorption of its central portion while the circumference remains healthy, the pressure of the aqueous fluid causing this portion to yield, and that it is thus pressed forward. "The membrane being thus weakened," writes Mr. Cooper, "is not in a condition to recover itself, unless the pressure from behind is removed, or support afforded to enable it to counteract that pressure. I have, therefore, endeavoured to combine these measures by evacuating the aqueous humour, and making moderate pressure on the front of the

(*a*) See Dublin Journal of Medical Science, vol. xxviii. pp. 102, 103.

globe, by means of an air cushion, acted upon by a spring, after the manner of a truss. By employing fluid pressure, I hope to afford general support rather than pressure upon the apex of the cone, only such as would result from the pressure of a solid body, which would also be more likely to excite irritation and other evil consequences." This plan was adopted in five cases without producing pain or irritation, but in neither case could it be persisted in for longer than three weeks, "in consequence of the air cushion, which was made of fine membrane, permitting the air to escape after being worn for five or six days." "Decided benefit, however," continues our informant, "did arise in a case where the apparatus was worn for a month, the aqueous humour having been evacuated three times during that period; and should the difficulty of obtaining a perfect apparatus be overcome, my belief is that this plan of treatment, in combination with general measures, will be found advantageous." Although this method is ingenious, we confess that we are not very sanguine as to its results, nor do we think any description of pressure will produce a thickening in the cornea, while at the same time it preserves its transparency. The only case in which we have ever produced permanent benefit was one in which we performed an artificial pupil, as recommended by the late Mr. Tyrrell. In this instance the lady was scarcely able to find her way through the streets. She had consulted the principal oculists in these countries, and had undergone several courses of treatment. She had been for a long time under the care of the late Mr. Wardrop, who tapped the cornea several times. In the summer of 1842, assisted by Mr. Cusack, we performed an artificial pupil in her right eye, not, as recommended by Mr. Tyrrell, by cutting out a portion of the iris, but by drawing its pupillary margin through an incision in the cornea, made close to its insertion, with the sclerotic externally. By this means the pupil presented the appearance here figured. This lady now reads very well by holding the book towards the right side.



Under this head may also be classed the following interesting case. A lady, aged 35, lately consulted us for what she termed weak sight, a difficulty in reading or discerning objects clearly in a strong light; but when the light does not fall upon the eye she can read pretty well. Upon looking at the eyes in front, a small, greyish, shining spot presents in each cornea, a little within and beneath the centre. At first sight this has the appearance of a vesicle, and bears some resemblance to the ordinary air bubble which appears in badly made glass. Upon examining the eye in profile, the cornea generally does not present any unusual convexity; but we can perceive a small mammulary projection at the spot referred to, which in this view appears perfectly transparent. Upon applying a fine camel-hair pencil to this spot, or drawing it over the surface of the cornea,

it at once sinks into a depression at the projection. It is manifest that the cornea has become thinned at this particular spot. Each projection is not larger than a small pin's head, and it is remarkable that they are precisely similar both in shape, appearance, and situation, in both eyes.

In certain forms of long-continued ophthalmic disease, in hydrophthalmia, and other cases where there is considerable distention of the globe, vesicles frequently form upon the surface of the cornea. They are quite transparent, are sometimes as large as a third of a pea, and are evidently formed by a fluid collecting between the thickened conjunctival layer of the cornea and its anterior elastic lamina. They are generally indicative of the amount of distention. There is at present a gentleman under our care whose lens was broken up for cataract some years ago; violent inflammation immediately followed, succeeded by that of a slow, chronic, but disorganizing character; complete loss of vision, and an enlargement of the globe, ensued. When we first saw him about a year ago, he had been suffering for some months previously from violent pain and distention of the globe, arising, he said, from "blisters collecting on the eye." Upon examining the eye, we found it exceedingly tense and painful to the touch, with the conjunctiva of the cornea thickened, and raised into vesicles, which, according to the patient's account, always formed when the eye became painful. We tapped the eye at once, by introducing a broad, flat needle through the cornea, giving it a half-turn so as to enlarge the opening, and permit the fluid to escape. This gave immediate relief. Whenever this gentleman feels the eye painful, or the blisters forming, he comes to town, and has the fluid evacuated, when all pain and irritability ceases. The eye now is nearly of the natural size, and intervals of ease are lengthening.

Mr. Wardrop long since recommended the evacuation of the aqueous fluid in cases of corneitis and aquo-capsulitis; and M. Desmarres lately advised paracentesis of the eye as a means of assisting antiphlogistic treatment in the reduction of internal ophthalmia, whether idiopathic or the result of surgical operation(*a*).

AFFECTIONS OF THE INTERNAL TUNICS, DIOPTRIC MEDIA, AND SENSITIVE APPARATUS.

On the Structure of the Vitreous Humour.—Dr. Hannover, of Copenhagen, has lately investigated this structure with great care, and his researches have controverted the generally received opinion of its being entirely a cell structure. The opinion of Pappenheim (who, having hardened the vitreous humour of an ox and a man, by treating it with carbonate of potash), that this body was composed of concentric layers, like those of an onion, is not quite cor-

(*a*) *Journal des Connaissances Medico-Chirurgicales*, 1st July, 1847.

rect, at least as far as the human eye is concerned, for this appearance is evidently the result of the coagulation of the albumen. M. Brücke, from whose observations Müller took the description of the vitreous humour which he has published in his Physiology, used a concentrated solution of the acetate of lead; but this physiologist's description is true only in part, as it does not define in what manner the different layers terminate. Dr. Hannover, who made his observations on the vitreous humours of several mammiferous animals which had remained in a solution of chromic acid for at least six months, gives the following description of this substance. Its structure is clearest in the horse; if a transverse section of the eye be made horizontally, and passing through the optic nerve, a great number of concentric lamellæ, which divide themselves into smaller ones, are observed; the external ones follow the internal circumference of the eye; they are thicker next to the retina, and thinner behind the crystalline lens. The vitreous humour, he says, considered as a whole, consists of several bags or cells, of various degrees of thickness, completely shut, and contained one within another. The exterior ones are naturally the largest, and the internal ones are nearer the entrance of the optic nerve than the lens. A line passing from the centre of the optic nerve, where it pierces the sclerotic, to the middle of the posterior surface of the lens, will pass through the summit of all these cells, and through the middle of their convexity. The exterior cells are softer and more transparent; the interior ones, especially those immediately behind the crystalline, are compact and thin; all the cells are thicker towards the sides of the eye, and become thin toward the optic nerve. If the eye is divided vertically, the same onion-like structure of the laminæ, particularly in the cat, dog, ox, and sheep, is observed. In man the vitreous humour is found to be chiefly composed of slices, the arches turned outward, and the angles converging towards the axis of the eye, somewhat like the segments of an orange, and this peculiarity is better observed in infants than adults. In two eyes which were very carefully examined by this observer, 180 rays were counted, but he has not been able to determine whether each segment has its own particular membrane, or a single membrane is common to two. Viewed with a microscope, the walls of the slices appear as simple transparent membranes, without any peculiar structure, but covered with innumerable small nuclei, which the author believes to be the result of precipitation. The axis, towards which all the slices converge, is the axis of the optic nerve. Having hardened a human eye in chromic acid, he made both horizontal and perpendicular sections of it. A horizontal section through the centre of the vitreous body presented an uniform plain surface, such as would result from the section of an orange cut right through the centre from pole to pole; whereas a perpendicular section of the vitreous body corresponded with what would result from a section of an orange made at right angles with that last described, viz., a number of rays converging

towards the centre, which rays correspond with the different divisions of the orange-like slices of which it is composed(*a*).

Cataract Statistics.—M. Sichel has lately published, in one of the Parisian journals, the result of his experience in cataract operations, in the shape of a statistical account of 100 eyes in sixty-four people, which were operated upon by him. In thirty-seven cases both eyes were operated upon ; in this country we are generally inclined to rest satisfied with a successful operation on one eye. Of the entire operated upon, seventy-nine are said to be successful ; of these, forty-one were by extraction, and thirty-eight by depression or breaking up, but the report does not say how many by each method: this is the more to be regretted, as we know that depression is a favourite method with the Parisian oculists, and it is one but little practised in these kingdoms. Ten were partially successful,—five by depression or absorption, and five by extraction ; complete failure only took place in eleven instances, of which three were by extraction, and eight by depression or breaking up: the report states, however, that, of the failures, five of the cases had been pronounced amaurotic previous to operation. Of the sixty-four people, sixty recovered vision, and four remain blind(*b*).

Cure by Suction.—Notwithstanding the established opinions with regard to the most approved methods for removing or displacing the lens, and the recorded experience of the most scientific and practical ophthalmic surgeons upon the subject, we yearly read of new methods of operating, as well as other means, in the shape of medicinal agents, extolled for the removal of cataracts. When we find practitioners subjecting patients with established cataracts to a course of treatment both local and general, we are greatly inclined—to use no harsher term—to question their experience, and when we find men proposing new methods of operating, such as cutting out a cataract through the sclerotic, and advising depression or breaking up indiscriminately, in preference to extraction through the cornea, we are very much inclined to doubt their capability of performing that dexterous operation. M. Blanchet has lately promulgated a new method of operating upon soft cataracts, which he denominates the operation of suction (*par suspiration*). The pupil having been dilated with belladonna, he punctures the cornea with a large cataract needle towards its circumference, in order that the opacity which follows may not occur in the field of vision. Through this opening he introduces a small tube with a flageolet-like mouth, attached to an Anell's syringe, with which he pierces the capsule of the lens, and if the cataract is soft, he pumps it out through this tube by working the piston of the syringe; but if, on the contrary, the lens is hard, or the capsule dense and opaque,

(*a*) *Annales d'Oculistique*, Feb. 1848.
(*b*) *Gazette des Hopitaux*, for 7th October, 1847.

he then has recourse to depresssion!(*a*) Such is the statement which has been vaunted in all the foreign journals as a discovery in ophthalmic surgery, but which must raise a smile on the face of every well educated or experienced practitioner. In the first place, any thickening or opacity of the capsule should be discovered before an operation is commenced; and although the actual amount of softening—whether the lens is absolutely fluid, or is of its natural consistence as in a young healthy person, or as soft as ordinary starch made for washing—cannot always be determined upon before the introduction of a needle, still it can in most cases be decided with tolerable accuracy beforehand. If the lens be fluid, to attempt this suction is a most unjustifiable, as well as most unnecessary procedure; for the simple introduction of a needle through the cornea, and the laceration of the capsule, will allow the fluid to become diffused with the aqueous humour, in which case it will sometimes be absorbed in the space of a few hours. Every operator of experience well knows, that, even in those cases of fluid cataract, it is necessary to lacerate both the anterior and posterior capsules freely. If this is not done they will, though not previously opaque, become so very shortly; and while the substance of the lens is absorbed, both capsules will adhere, and become remarkably opaque, often remaining in such cases like a piece of egg-shell, held behind the pupil by a very thin, semitransparent membrane. And as these will not absorb, and can with great difficulty be depressed, it is frequently necessary to remove them through an incision of the cornea. Now the very wound made by M. Blanchet's suction pump is just the thing to produce this opacity; moreover, there must be a greater violence and injury done to the eye by this complicated process, than even by the roughest attempts at breaking up, whether through the cornea or sclerotic. In a case of congenital cataract in a young woman aged 18, upon whom we operated last year, and of which an account will be shortly published, this peculiar phenomenon occurred. Upon drawing the cutting edge of the needle across the anterior capsule, its fluid contents immediately burst out, and mixed with the aqueous humour, rendering the latter the colour of skimmed milk, and completely obscuring the iris. Having placed a bandage upon the right eye, we then proceeded to operate upon the left, when the same phenomenon occurred. In the space of about four or five minutes we removed the bandage from the eye first operated upon, when lo! the entire opacity had disappeared, except a few specks which remained on the torn capsule, and nothing was to be seen in the anterior chamber but a few grains of a white powdery substance at the junction of the iris and cornea beneath; and then, upon looking at the other eye, the same clearness was found to have taken place there also, and imperfect vision (for the patient had never seen before) was found to be established. Now we can only account for

(*d*) *Revue Medicale*, for August, 1847; and *Journal des Connaissances Medico-Chirurgicales*, p. 109.

this rapid removal of the milky state of the aqueous humour, by supposing that the heavier particles which formed it subsided, and, falling through the dilated pupil (for the patient was in the recumbent position), had deposited behind the iris, as a mixture of flour and water will do, if allowed to remain undisturbed; or that some chemical action had occurred between the salts of the aqueous humour and the opaque particles of the cataract.

Removal of Opaque Capsules.—In connexion with the subject of portions of opaque capsule remaining behind the pupil in the manner we have described above, and which are generally the result of insufficiently lacerated capsules in the operation for congenital cataract, we may mention the following mode of proceeding, which we have adopted with great success latterly. A single case out of many will suffice to express our meaning. A boy, now aged 16, had been operated upon for congenital cataract when quite a child; we saw him first three years ago; he could find his way tolerably well in a modified light, but could not read, and was unfit for any occupation requiring accurate vision. An irregularly-shaped piece of capsule, about a line and a half in length in its longest diameter, of a dense white colour, and striated with well-marked wavy lines upon its surface, presented behind the pupil, and was held in its position by a thin, fine membrane, which was attached to it all round, and fixed it apparently to the ciliary circle. Through this fine membrane, when the pupil was dilated, the boy was able to see as described above. Upon endeavouring to drill this membrane with a fine needle, it was found impossible to make any impression upon it, and it receded towards the fundus of the eye every time it was touched, and appeared to drag with it the ciliary margin of the iris. By a series of small operations, however, performed at different periods over a space of nearly fourteen months (for the patient was of a most inflammatory nature), we succeeded in making a number of apertures in this thin but tough membrane which retained the opacity in its place, until the latter was held by a stalk or pedicle next the outer side of the cornea. We then, assisted by Mr. Smiley, made an opening about a line and a half in length in the cornea, opposite this point of attachment. During the escape of the aqueous fluid, the opaque body rushed towards the opening; it was seized with a fine forceps, drawn through the incision, and its attachment divided with a scissors, the bit of thin semi-transparent membrane returned within the eye; and the usual treatment after operation resorted to. In a short time the same course was pursued with the other eye, and the boy now reads perfectly well with cataract glasses. In detaching or cutting through a piece of opaque capsule, such as that we have described, or an adventitious membrane closing the pupil, in which several operations are required, the needle cannot be made to work with effect when introduced at the same side of the cornea or sclerotic each time. These membranes, but particularly the cornea, act as the fulcrum of the lever into which the needle is converted

during part of these operations, and it must be introduced at different points, and even sometimes at the nasal side of the cornea, in order to cut, lacerate, or detach such an opacity existing or adhering at the external side of the pupil.

Salivation previous to Cataract Operations.—M. Tavignot recommends the employment of mercurial salivation previous to cataract operations. He is led to this from the favourable influence which it exercises over acute inflammation, iritis and keratitis, the most frequent causes of failure in operations, according to this author. He advises the operation to be undertaken as soon as the first symptoms of salivation appear, and he continues the mercurial action for two or three days afterwards, so that the ptyalism may be at its height by the time secondary inflammation would be likely to ensue(*a*). We have only to remark, that we think the practice in the operation for solution unnecessary, and in extraction most injurious. Mercury will not always prevent local inflammation, and we have known cases of violent syphilitic iritis occur, when the patient was actually salivated for another form of the disease. Mr. Tyrrell, whose practical observations on the subject we would recommend to the attention of our readers, very justly remarks, that mercury sometimes prevents the union of the section of the cornea, by checking the adhesive process. In some cases mercury is imperatively called for, but not as advised by M. Tavignot(*a*).

It is, however, possible that mercury may be necessary as a safeguard in the very violent operations for cataract by depression, reclination, and solution, which we occasionally hear of being performed in Paris. Dr. Hays of Philadelphia, in commenting on this extravagant proposal, says very justly: "M. Tavignot must be a very unfortunate operator if iritis or corneitis usually occur after his operations for cataract, or even hæmorrhage into both chambers of the eye. We would respectfully submit whether it would not be advisable to adopt a different method of operating from that which he employs, rather than, for the insufficient reason he assigns, to subject patients to the evils of salivation. The fact that mercury is often efficacious in arresting inflammation affords slender reason for introducing it into the system to prevent the occurrence of that accident. The mercurialization of a patient will not protect him from the sequence of a badly performed operation."(*b*)

Cholesterine Cataract.—About six years ago, a butcher, aged forty years, consulted us for loss of vision in his right eye, the result of a blow received some years previously. Upon examination we found a hard cataract, of a remarkable yellow colour, and to all appearance of a calcareous nature. Certain portions of its external surface presented the brilliant metallic appearance known as gold-leaf cataract. From its singularity we had an accurate drawing made of it at the time, and then lost sight of the patient for some years. Twelve

(*a*) *L'Union Medicale*, August 5, 1847.
(*b*) The American Journal of Medical Science, for January, 1848.

months ago he again applied at the hospital, in great pain, and with the eye deeply inflamed, the result of a blow which he received upon the temple a few days previously in a drunken squabble, when, to use his own expression, his eye was burst. Upon examination we found that to a certain degree his opinion was correct, concussion and dislocation of the lens having taken place. The central nucleus of the lens was lying at the bottom of the anterior chamber, and a quantity of brilliant matter, like broken-up gold leaf, floated through the aqueous fluid, and adhered to the back of the cornea. When the eye had been at rest for some time, the greater portion of these particles subsided to the bottom of the chamber, but upon moving the eye, or on the patient's making any exertion, they floated upward, producing the appearance which we sometimes see in the fundus of the eye, and which, under the name of "sparkling eye," has recently engaged the attention of oculists. We had an accurate drawing made of the eye in this condition. The usual antiphlogistic treatment having failed to afford relief, and the pain being most intolerable, we agreed to extract the lens, and remove as much of the offending body as possible. As this very remarkable case afforded a rare opportunity for analyzing this peculiar form of cataract, Professor Aldridge carefully examined the case, and assisted us at the operation. We made an inferior section of the lower third of the cornea with Scott's extraction knife, which is well adapted for such cases, from the curvature on the back, and the little space which it occupies. During the incision a small eye-cup was held beneath the globe, in order to receive the lens, and other means adopted to preserve as much as possible of the substance we wished to analyze. As soon as the incision was completed, the great mass of the broken-up lens and the central nucleus immediately escaped, and the remaining fragments were removed with Daviel's scoop. Immediate relief was experienced; the wound healed by the first intention, but with rather a broad cicatrix. There was no adhesion or distorsion of the pupil. The globe did not collapse, but the vision had been for many years extinct.

We give the following account of the analysis from a letter of Professor Aldridge's: "You may recollect that previous to operation distinct and beautiful crystals were visible, attached to the interior of the cornea, similar to scales of yellow mica. These, during the operation, you scraped off at my request, and handed them to me, together with the extracted lens. The crystals referred to, when examined by the microscope, appeared under the form of rhombic plates. They were soluble in ether and hot alcohol, from the latter of which they recrystallized in cooling, and were insoluble in a solution of potash, which, however, removed their colour. The lens was anteriorly sprinkled closely with similar crystals, but when these were removed, by digesting with ether, the lens itself remained white and opaque. It was insoluble in water, alcohol, ether, or dilute acid, but readily dissolved when gently heated in a solution of potash, and was again precipitable by acetic acid. I think there can

be no doubt but that the crystals were chiefly composed of *cholesterine*, and that the cataract was due to the deposition of some proteine compound, and a distinct phenomenon from the crystallization of the cholesterine discovered upon its surface, and which was afterwards so manifest in the anterior chamber." Beside the general interest of this very curious case, there are two topics connected with it on which we would remark: First,—the value of having accurate drawings made of every remarkable case which occurs, even though at the moment no ultimate benefit, except that of representing a peculiar form of disease, may appear to be gained; and secondly,—the advantage which ophthalmic surgery must derive from the analysis of morbid products such as that described.

Persistence of the Membrana Pupillaris.—A case of cataract (so called), formed by the persistence of the pupilary membrane of Wachendorf, has been lately recorded in the Milan Gazette by Dr. Paolo Bernard. It occurred in one eye of a boy aged at the time of examination six months. The globes were perfectly normal, and the greyish opacity which presented within was mistaken for opacity of the capsule of the crystalline. The real state of the eye, however, was subsequently discovered; and, indeed, we only mention the case here on account of its having been mistaken for true cataract. There was a small opening in the centre of the membrane, and around this could be seen, says the relater, a number of vascular globules, similar to those mentioned by Cloquet in the pupillary membrane. No operation was required. Frictions of belladonna were used to the temple and eyelid three times a day, and calomel in small doses administered. Three days afterwards the membrane was found to be detached from the iris for two-thirds of its extent, and it was diminishing daily when the report was made(*a*). Instances of the persistence of the membrana pupillaris for even a later period than that specified in the foregoing case have been recorded by Ammon and other writers upon congenital defects of the eye.

Sparkling Eye.—In synchesis and certain forms of ophthalmic disease we sometimes observe, upon looking steadily into the depth of the eye, that there is a peculiar scintillating appearance exhibited. At times this has the appearance of small sparks of light, not unlike the phosphorescence which sometimes appears upon the surface of the sea, particularly when the water is agitated. Those brilliant sparks generally appear to rise up from the inferior surface of the eye, and fall down again in a description of shower. In two cases which we have had under our care, this appearance could be induced by any motion or exertion, when it very much resembled the look which a bottle of *eau de vie* presents when the gold leaf in it is shaken up. There are other appearances in the eye of a luminous character, with which this must not be confounded. In certain forms of amaurosis we can, particularly when the pupil is dilated, perceive a brilliant yellow appearance, with a metallic lustre, and of a spherical shape, lining

(*a*) *Gazetta Medicale di Milano* for 26th December, 1846.

the fundus of the eye. At first view this might be taken for the early stage of malignant disease, but the history of the case, the age of the patient, and the attendant circumstances, will enable us to distinguish it from that affection, although at times the differential diagnosis is exceedingly difficult. The scintillations to which we have alluded may or may not be attendant upon this form of disease. The cause of these appearances has lately engaged the attention of several continental writers. M. Desmarres thinks that it is due to a peculiar morbid disposition of the hyaloid cells, which, being less distended than natural, on account of the fluidity of the vitreous humour, and floating one over the other, reflect separately, instead of refracting the light. M. Malgaigne considers that this phenomenon is owing to the presence of little foreign bodies floating in the vitreous humour, and put in motion during the movements of the eye. These he believes to be crystals of cholesterine, which reflect the light as they present themselves to it in several inclinations. M. Tavignot's opinion coincides with the latter. He says that he has collected some of these sparkling particles, and that they bore the greatest possible analogy to the corpustules of cholestria sometimes found in the liquid of hydrocele. He does not know, he says, whether their chemical composition be the same, but he considers it probable; and he thinks that the crystalline capsule, from its serous character, at least upon one aspect, may give rise to a product similar to that produced by the tunic vaginalis(*a*). We incline to the opinion, that in a great many cases the sparkling appearances are caused by the chemical substance just alluded to; and we are the more induced to believe this from the examination of the gold-leaf cholesterine cataract already detailed at page 497; but there are other cases where the brilliant appearances do not present a palpable character like those just described, but appear as brilliant, evanescent scintillations of light, even in the anterior chamber.

New Iris Forceps.—We know of no operation (except lithotomy) for which so many and such complicated instruments are devised, as that of artificial pupil. The armamentarium chirurgicorum abounds with knives, scissors, hooks, single and double forceps, and all manner of ingenious contrivances of a like nature. We are not, therefore, surprised to hear of any new instrument invented for this purpose. Professor Beaumont, of Toronto, has lately invented a pair of forceps for detaching the iris from its ciliary margin in the operation by separation, or iridodialisis, instead of the ordinary hook employed in Europe. His reason for this innovation is, that in operating upon the dead subject, he "found the hook sometimes tear its way out of the iris, instead of detaching it;" and he fears that "the hook may possibly, in transfixing the iris, wound the cspsule of the lens." Now, in the first place, we never knew either of these accidents to occur in a properly performed operation on the dead or the living subject. There are two hooks in use at present

(*a*) *Revue Medico-Chirurgicale.* August, 1847.

for detaching the iris: the one most commonly employed in England is the blunt hook, bent at rather an acute angle with the shaft of the blade, and well described by Mr. Tyrrell. That employed by Jäger, and generally throughout the Continent, and which we invariably use, is sharp, with a more circular curve of the bend; it enters the iris with much greater facility than the blunt hook, but it requires considerable care and dexterity in its management, particularly in withdrawing it through the corneal incision. Whichever hook is used, as soon as it has partially detached the iris from the ciliary body, the handle should get a half turn, so that the flat of the hook may present against the inner surface of the cornea, to which it should be invariably applied upon withdrawing it. An operation so conducted cannot possibly be injurious to the lens or its capsule.

The instrument of Mr. Beaumont consists in a forceps slightly bent in the blades, and having the points furnished with a pair of fine curved teeth, with which he transfixes the iris while the blades are partially opened; the blades are then closed, and the iris, thus entangled in their points, is drawn through the wound in the usual manner. We think it answers anything but the intention required, and is very much inferior to any of the forms of hook(*a*). We have had some experience in a variety of forceps, and have latterly found the accompanying form, which was given us by Professor Rosas, and here represented the natural size, more useful for performing artificial pupil, withdrawing a bit of the iris, or removing a portion of capsule, than any other. It is as fine at the points as that invented by Mr. Dalrymple, and with a light hand can be used with much greater accuracy and delicacy.

Prolapsus of the Iris.—The ordinary myocephalon, or hernia of the iris, the result of a wound of the cornea, or penetrating ulcer, is frequently a most distressing symptom, and, in young children, where there is great irritability, lachrymation, and intolerance of light present, as well as exceeding timidity on the part of the patient, one very difficult to manage. If the protrusion is recent, it may frequently be reduced by the application of belladonna and atropine, and lessening excessive action locally; at the same time carefully avoiding all mechanical attempts at reduction. We usually cover up the eye for forty-eight hours after the accident, applying the belladonna as frequently as possible. With the rule laid down in books, of not applying the belladonna if the rupture has occurred near the edge of the cornea, we cannot agree, for if the iris dilates generally, it must of necessity tend to draw the small protruded portion within the chamber. If the iris has become adherent, all such attempts are fruitless; we must then direct our efforts to the removal of the hernia. Unless the patient is very steady, and will allow

(*a*) Medical Gazette, March 19, 1847; and Braithwaite's Retrospect, vol. xv. p. 322.

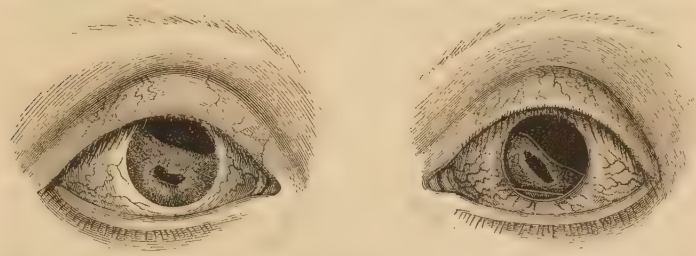
the operation to be performed quietly, and permit oil to be applied to the protrusion immediately afterwards, the use of the solid nitrate of silver is often injurious. Evacuating the fluid of the little sac with a fine needle can only be performed under like circumstances, as all rough handling, or forcible opening of the eyes, is injurious, and at times increases the mischief. When no progress has been made for more than the ordinary time, we have snipped off the protrusion with a curved, blunt-pointed scissors, and thus got rid of the cause of irritation. M. Desmarres has lately recommended *A New Method for reducing Iridial Hernia*, by cauterizing a spot upon the sclerotic conjunctiva, close to the corneal aperture, with solid nitrate of silver, the pupil having been previously placed under the influence of belladonna. By this means, he says, a very active inflammation of the vessels which feed the edges of the ulcer is induced, and by an increased secretion round the margin of the hernia it is set free, and drawn within the chamber. If one effort fails, he repeats the caustic several times. We have no experience of the practice, but intend to give it a fair trial(*a*).

Iritis.—One of the latest communications upon this subject is a series of lectures delivered at the London Ophthalmic Hospital by Mr. Dixon(*b*), and to these we would particularly refer our readers. There is, however, one opinion of Mr. Dixon's, with which we think few ophthalmic surgeons will agree, it is that, "invaluable,—indispensable as belladonna is in our examination of many morbid states of the eye, I confess I do not regard its local employment as of any service in iritis, for an inflamed iris loses its power of motion;" and at a later period, when the iris is beginning to recover its motory function, he thinks it may do harm by forcibly dilating the pupil, and thus leaving upon the surface of the anterior capsule of the lens those small brown pigment cells which adhere to it from the uvea. How many cases, however, do we see, where no belladonna was used, in which these brown specks subsequently present upon the lens; and how many cases of permanent adhesion have occurred from the disuse of this valuable remedy? It is true that the iris is not, during a high state of inflammation, as susceptible of the influence of belladonna as in its normal condition; but this want of susceptibility is exceedingly various; and in some cases the iris will dilate, though inflamed. In many instances we are able to break up slight adhesions by the influence of belladonna and atropine. Those very brown spots to which Mr. Dixon refers may, if belladonna is not used, become permanent adhesions between the iris and lens, with permanent contraction and opacity. How many cases do we see in which those fuscous specks or patches present upon the capsule of the lens, as the sequelæ of internal ophthalmia, when the vision is unimpaired? Upon the whole we are strongly inclined to the opinion that much greater mischief may be done by

(*a*) *Traite Pratique*, and Ranking's Abstract, vol. vi. p. 285.
(*b*) The Lancet for March 4 and 18, 1848.

the general omission than the indiscriminate use of belladonna in all cases of internal ophthalmia. In every other particular Mr. Dixon's lectures are characterized by sound sense and great practical experience.

Injuries of the Iris.—In the sixth Number of this Journal (for May, 1846), Mr. W. W. Cooper detailed and figured an interesting case, in which separation of the iris from its ciliary attachment occurred in both eyes of the same individual, the result of injuries at



different periods. The accompanying illustration explains better than words the nature of the accident and the appearance presented.

Mr. H. L. Smith has related a somewhat similar case of false pupil, which also occurred at the superior attachment of the iris. "This false pupil," he says, "varies much in size, being scarcely observable when the natural pupil is dilated, but enlarging when the natural pupil contracts. The false pupil is also, though not to a great extent, affected by the application of belladonna." This latter, however, must occur from its general effect upon the iris.

Malignant Diseases of the Eye-ball.—While we have nothing particularly new to record on this subject, we must refer our readers to a most admirable paper of Mr. Lawrence's, reported by Mr. Holmes Coote in the Medical Gazette for June 2, 1847. This paper is illustrated by wood-cuts, showing the microscopic appearances exhibited in the different forms of malignant diseases of the eye-ball, made from drawings by Mr. Coote. One of the forms of disease described in Mr. Lawrence's communication consisted in a change of structure in the choroid membrane, accompanied by absorption of the retina, hypertrophy of the sclerotic, and general enlargement of the eye-ball. The eye was extirpated, and the following is the examination of the parts; it does not, we think, exhibit a decided evidence of malignancy,—either melanosis, fungus hæmatodes, or true cancer:—"The globe was filled with a diseased growth, moderately firm, partly yellowish, partly reddish, of considerable vascularity, without any trace of the normal structures: it was very much like what is frequently observed in a scrofulous testicle. If it had been seen detached, no one would have supposed that it had formed part of an eye. Upon careful examination, it was found that this diseased mass was choroid and iris, both of them much thickened, entirely altered in structure, and in great part deprived of their normal coating of pigment cells. In the middle of the eye there was a small cavity,

with smooth and darkish surface, containing a little dark fluid. This cavity was occupied by a mass consisting of the reflected iris: it had pushed forwards against the posterior surface of the cornea, and had been from thence reflected towards the centre of the globe. The sclerotic was much thickened, in some parts to the extent of a quarter of an inch, its texture being softer than usual. The cornea was extended and thin. At the extremity of the optic nerve there was a small shred of retina. The ulcerated spot upon the anterior surface of the globe penetrated the cornea, and opened into the anterior chamber. There was no trace of crystalline lens or ciliary processes."

We still require much information on the subject of malignant diseases of the eye-ball, and those affections which resemble them, and we think it incumbent on every surgeon who treats such to record the result of his experience. The following opinion of Mr. Lawrence is worthy of our strictest attention:—"I would not, however, represent to you that the state of a patient with fungus hæmatodes of the eye is absolutely hopeless. By the long-continued use of mercury the progress of the disease has been arrested in a few instances, and the morbid deposition has been removed. I had under my care a case of this kind, in which I saw the morbid deposit in its early state, in which the globe afterwards enlarged, and the lens became opaque. The employment of mercury, persevered in for many weeks, completely arrested the malady; and the patient, after remaining well for years, died of affection of the head, excited by development of disease in the brain."

At one of the meetings of the Pathological Society of London, Mr. Dalrymple "showed a series of preparations, accompanied with drawings of the various forms of malignant disease of the eye, in order to prove the utility of operative interference in any stage of such affections. The result of extended experience has convinced him that where the globe had been extirpated at the earliest possible stage of the disease, the death of the patient was brought about sooner or later by the formation of secondary tumours in the brain, in the same manner as when the globe had been extirpated at a more remote period of the disease."(*a*) In our November Number Mr. Dalrymple published a valuable paper upon encephaloid disease, producing amaurosis, to which we would call the attention of our readers.

Mr. Hensley exhibited at the Bath Pathological Society a cast, and related a case of malignant disease of the eye-ball, the most remarkable circumstance attending which was, that after the destruction of one eye the other became affected(*b*). Upon examination after death the entire contents of the cranium, and even the bones of the head, were found diseased.

[If our space permits, we will continue this Report in a future Number during the present year.]

(*a*) Medical Gazette, March 26, 1848.
(*b*) Provincial Medical and Surgical Journal, Nov. 17, 1847.

RETROSPECT

OF MATERIA MEDICA AND PHARMACY.

By RICHARD AUSTIN, M. D.,

LICENTIATE APOTHECARY.

The Editor intending, in a succeeding Number, to supply the readers of this Journal with a Report of Therapeutics, I have simply confined this Retrospect to those subjects of a purely pharmaceutical nature which appeared to me of the most useful and interesting character.

ADULTERATIONS OF DRUGS.

On a spurious Yellow Bark. By Dr. Jul. Martiny, of Darmstadt.—Dr. Martiny gives the name of Cortex Chinæ pseudo-regius, to a bark which has recently been introduced into commerce under the various denominations of China regia, China rubiginosa, China flava, and yellow-like China regia, &c. &c. The pieces generally measure from three to twelve inches in length, from one to four inches in breadth, and from two to five lines in thickness; only a few pieces, and these only in some places, are covered with the epidermis. The outer coat is usually of a silvery white, seldom of a brown colour, and very loose and spongy. It consists of thin, micaceous, and glittering laminæ, usually of the thickness of common writing paper, which can be easily raised by a knife from the cortical substance. The coated parts are very similar to those of Carthagena bark. The predominating colour of the cortical substance is a faint yellowish brown, almost like clay; on a more close examination, however, great variety is discovered in the different pieces, the younger barks particularly displaying many reddish brown spots. The surface of the cortical substance is uneven, from the impressions of the coat; in the younger bark the frequently occuring longitudinal cracks, and the more transverse cracks, are marked by impressions and protuberances; in the older bark scutiform impressions are often noticed. The undamaged surface, if examined with the assistance of a magnifier, appears very smooth, but thickly and deeply spotted; the entire substance of the bark has a ligneous texture, is rather heavy, and towards the interior of a somewhat lighter colour: the interior surface is usually covered with an undamaged liber-like coat, and is very similar to yellow bark. The younger bark breaks longitudinally, not so easily as the older, and the fracture is shining and uneven. At the outward edge of the transverse fracture, the fibres are rather short and deep coloured, those on the inner edge are longer and considerably lighter: another distinguishing mark is, that on touching the bark the fingers do not in the least suffer from splinters. The cut surface of the spurious yellow bark shows thin fibres, and a dirty yellowish brown

colour; its smell is bark-like, its taste at first acid, and then very bitter and aromatic, somewhat like that of roasted coffee(*a*).

Spurious Cascarilla Bark.—Cortex Cascarillæ spuriosus consists, according to Holl, of quilled pieces, of about the thickness of the finger. It is yellowish grey outside, with longitudinal, but no transverse cracks, and is frequently covered with a lichen resembling *Verrucaria nitida*. Beneath the epidermis its colour is almost like that of the genuine bark, but its surface is rougher; the internal surface is deeper greyish brown, and the fracture less smooth; on examining a transverse section by a glass, fine dark brown glittering lines, marked with white, serpentine-like strokes, are seen passing from the interior edge towards the epidermis; the exterior lighter substance is, however, not strongly marked. In the genuine, the fine lines are much less distinct, and the exterior substance is distinctly separated from the interior by a greyish white stripe. The taste is similar to that of the genuine, but more disagreeably aromatic. Most reagents have the same effect as on the genuine, only a solution of sugar of lead produces, with the spurious cascarilla, a dark brown precipitate, and with the genuine a brownish yellow. There is no doubt but that the spurious bark belongs to a kind of croton(*b*).

On a very inferior Cinchona Bark found in Commerce. By Herr St. George, Apothecary in Giessen.—Since the discovery of quina, ash cinchona (*zen* or *jaen China*), called also pseudo loxa, has been entirely rejected on account of its being deficient in this alkaloid. It is, however, frequently met with in commerce. The outward appearance of this bark is remarkably fresh; and its colour is, on the whole, blackish slate grey, which is given to it principally by lichens which thickly coat it. Larger and more slightly adhering lichens are rarely to be found in it, whereas the genuine loxa is more frequently covered with them, by which it obtains a somewhat variegated appearance. The transverse cracks of the ash cinchona (*zen China*) are very short and close together; those of the genuine bark more annular and farther apart. Ash cinchona is only about a quarter of a line thick, on account of the thinness both of the cortex and alburnum (*splint*); whereas the loxa is at least half a line thick. For this reason, we find less entire and closed quills than such as are broken lengthways and blistered, by which the inner, and, for the most part, bright rust-coloured, or sometimes pale yellowish surface, is more exposed than in the quills of the other kind of cinchona. In this way the ash cinchona acquires its peculiar fresh appearance. Thin splinters of wood adherent to the internal surface are also frequently met with; when broken, the alburnum (*splint*) generally appears much brighter, and, when seen in opposition to the rust-coloured surface, is almost of a straw colour; whilst genuine loxa on breaking presents uniformly a

(*a*) *Pharm. Central Blatt*, No. 37, August 26, 1846; Bell's Pharm. Journal, vol. vi. No. 5, Nov. 1846.

(*b*) *Pharm. Central Blatt;* Bell's Pharm. Journal, vol. vii. No. 1, July, 1847.

cinnamon brown colour, and externally is dusty, and therefore appears less fresh. The transverse and oblique fracture of the ash cinchona gives no trace of resin; whereas the horn-like appearance of the cut surface of the loxa bark shows a considerable proportion of resin. A decoction of the ash cinchona does not become turbid on cooling; its taste is acidulous, very astringent, and not at all bitter; whilst the decoction of a very good cinchona becomes on cooling like coffee with milk, and has an acid, but less astringent, and very bitter taste. It is advisable to reject both sorts, to be the more sure of not obtaining the ash cinchona(*a*).

On some spurious Sorts of Opium. By M. Batka.—He states that some opium which he obtained consisted of pieces like that from Smyrna, strewed over, as is usually the case, with the flowers of Rumex, but not wrapt in leaves; it was as shining as the Egyptian, only of a darker colour. Having been for some time exposed to the air, it was almost without smell, very hard, without being stony; did not become soft in the hand, like genuine opium; felt like sand between the teeth; had a bitterish, but not bitter taste; glistened when broken, and mixed with many light spots like *resina garannæ*. When tested for resin by friction it showed no electricity, it carbonized in the flame without melting; and the smell which it then emitted had a remote resemblance to that of frankincense, as it also had when triturated or dissolved.

It was easily triturated, whilst the genuine opium becomes more or less viscid; its powder is brownish and dry; the cold watery infusion frothed strongly, as if from gum; the warm solution did the same; was reddish brown when held against the light, but became cloudy on cooling; litmus showed no reaction on the watery solution; by alcohol an abundant precipitate was thrown down from the filtered solution, in which litmus became red after standing for some time. The filtered watery solution, by evaporation, yielded gum, which burned to ashes; on burning the resinous residue it consumed with a sooty flame and resinous odour, leaving behind a coal, which glowed and incinerated, evolving a disagreeable smell, like that of animal glue. The result of a qualitative analysis was the following:—

25 per cent. of matter insoluble in water and alcohol, consisting of
- 7 per cent. of combustible matter, containing nitrogen and carbon.
- 18 per cent. of incombustible substances, viz., sand, traces of iron, lime, and lead.

64 per cent. of substances soluble in water = gum.
9 per cent. of substances soluble in alcohol = resin.
2 per cent. loss.

100:—without any trace of morphia or meconic acid.

(*a*) *Jahrb. für Prakt. Pharm.*, pp. 103 4; Bell's Pharm. Jour., vol. v. No. 8, p. 370.

M. Batka states it was offered to him as a secondary sort, and that it had likely been kept with opium, as it had at first a smell of this substance, which it had afterwards lost.

Another sophistication, under the name of *Egyptian opium*, he states he saw in London, where he examined, under the denomination of unrated goods, a box with cakes of catechu, which were then imported, and consumed as Egyptian opium. The Egyptian opium has, as is well known, a dark brown, bright, glistening colour, and, by fracture here and there, lighter, orange-coloured, clouded spots. The opium which he saw, and which he recognised as a product quite similar to Bengal catechu, by the bitterish, and afterwards sweetish taste, resembled this opium perfectly, both externally and internally.

He also mentions another opium-like artificial product, which he received in London, under the name of *Dikki Malei*, from the Malabar coast of India, and states that Martius mentions an article similar to this, when speaking of the Smyrna opium, but quite different from what he received; this consisted of rather equally formed opium-like cakes, of two inches square, three to four inches thick, hard and dark, with spots on the surface like gum; when rubbed they developed a smell of sealing wax; the fracture was like that of guaiacum, greenish yellow, and resinous, with brownish, catechu-like spots. It had a peculiar astringent taste, sticking to the teeth, and leaving behind, when chewed, an orange yellow powder, which contained no rice flour, but only gum resin.

Merk observes, in his chemical diagnosis of opium, that the opium obtained under the name of Constantinople opium contains the greatest proportion of sulphate of morphia, and on that account M. Batka always uses the acetate of baryta as a reagent in the examination of opium, in order to determine qualitatively the best sort, as, in fact, only the best Smyrna opium reacts upon it; and the Patna, Benares, English, Grecian, and Egyptian opiums are, at the utmost, only clouded by it, but throw down no precipitate(*a*).

An easy Method of ascertaining the Genuineness of Guaiacum Wood. By J. H. Schuncke.—When a few drops of a solution of chloride of mercury are poured over some shavings of guaiacum wood in a test tube, and slightly warmed over a spirit lamp, a bluish green colour is immediately produced with all genuine samples. This test is easier than that by means of nitrous vapours, and is probably owing to the same cause as the colouring of guaiacum wood described by Schacht(*b*).

A new Method for detecting spurious Musk-Pods. By J. Moore Neligan, M. D., M. R. I. A.—Dr. Neligan states that it is now very generally known that musk is the peculiar secretion of a small sac situated immediately in front of the preputial orifice of the male musk animal (the moschus moschiferus); that it is principally

(*a*) Buchner's *Repertorium*, Bd. xiv. Heft. 3.

(*b*) *Archiv. der Pharm.*, No. 44, p. 178; Chem. Gazette, No. 80, Feb. 16, 1846.

imported into the British market from China; and that the Chinese squeeze out some of the secretion, which is fluid in the recent state, and mix it with, it is believed, the dried blood of the animal. This compound, which presents the same physical characters as true musk, they put into small sacs made of pieces of the skin cut off from other parts of the animal's body, and prepared so as almost to defy detection with the naked eye.

Dr. Neligan states that the method hitherto adopted for detecting this sophistication has been the peculiar position of the hairs, which are arranged in a circular manner around the orifice in the genuine musk-pod, and also the absence of any remains of the hairs in the artificial pods ; but those characters are not invariable, as he has seen some spurious musk-pods which were so skilfully prepared as to be undistinguishable from the genuine article when compared with them.

The plan proposed by Dr. Neligan depends on the microscopic characters of the hairs which grow on the preputial sac of the musk animal, and which, as far as he has been able to detect by direct experiment, differ very remarkably from those of the false sacs which are met with in commerce; and that he had recently an opportunity of pointing out the test to Dr. Christison, of Edinburgh, from some specimens in Dr. Christison's museum : and he further states, that the character of the hairs may be readily understood by reference to an illustration which he gave of a hair from a genuine, and one from a false musk-pod. Hairs of the same size have been selected, and they were drawn as seen through a microscope of 300 diameters.

The difference appears to depend on the fact that the hairs of this part of the animal are furnished in the interior with distinct, regular, colour cells, while in hairs taken from other parts of the animal's body those cells appear to be obliterated, as is generally the case in this and the allied tribes of animals(*a*).

On false Batavian Musk-Pods. By Dr. E. Martiny.—Artificial musk-bags have been lately imported from Batavia into Hamburgh. Dr. Martiny describes them as follows:—The size of the bag, as well as its shape, is very nearly that of a walnut, but somewhat flattened. Externally the bag is covered with very fine hair, except at a small spot which covers the flattened surface. These hairs are from ten to fifteen lines long, very thin, soft, pale, greyish white at the root, and brownish grey at the point. They run regularly in one direction, cover smoothly the convexity of the bag, and are likewise cut off at the top near the flattened surface. The hair is as soft and brittle as that of the officinal musk-bag, but has not the undulating curve of the latter. Near the flattened surface the skin is repeatedly folded, and within these folds is also covered with hair ; it is, therefore, quite clear, that a piece of the common animal's skin had been fastened upon some round body, and had been closely cut off at the top. On further examination it was observed that these bags

(*a*) Dublin Quarterly Journal, vol. i. N. S. p. 78.

had neither the usual opening of the musk-bag nor the remains of the penis.

After the bag had been kept for one night wrapped in a cloth moistened with water, the cutaneous covering became softened, and the folds near the flattened surface opened, so that it was impossible to examine the interior. The skin was about one line in thickness; the cutis (*Lederhaut*) was transparent, fresh, and showed no trace of decomposition, except that the hairs readily fell out. This skin is, perhaps, taken from some of those musk animals found in the East Indies (*moschus Javanicus*, *kantchil*, *meminna*, *pygmæus*), but which have no musk-bag. The cavity is filled up with some solid, light brown vegetable substance, having a faint smell and strong astringent taste. It is soluble neither in water nor in ether, but partly so in spirit of wine and in dilute muriatic acid. Chloride of iron, added to the light brown spirituous solution, gave it a blackish brown colour; solution of caustic potash dissolved the substance perfectly, and formed a dark, brownish red solution, but the colour was destroyed again by nitric acid(*a*).

We believe the most common adulteration of musk, when sold without the pod, is the addition of dark-coloured peat in powder.

On spurious Spermaceti. By M. Ulex.—This article was imported from New York under the name of *Solar spermaceti*, in snow-white square blocks, of a beautiful radiating fracture. It is hard, friable, not fatty to the touch, and possesses but a slight fatty odour. When one part of this substance is heated with three parts of alcohol of 0·863, a perfectly clear solution is obtained, which begins to crystallize at 99° F. The principal differences between the solar spermaceti(A) and genuine spermaceti(B) are:—Crystallization: A, radiate; B, laminar. Colour: A, dull white, slightly yellowish; B, transparent white. Specific gravity: A, 0·933; B, 0·943. Melting point: A, 131°; B, 113°. Alcohol of 0·821 dissolves entirely A, but only three and a half per cent. of B. Caustic and carbonated alkalies form soaps with A, not with B. The properties of the solar spermaceti agree essentially with those of margaric acid, which is probably obtained in America by the saponification of pork fat(*b*).

Detection of Stearine and stearic Acid in Wax. By E. Geith.—In examining wax it should be first tested for stearic acid. About two drachms of the sample to be examined are digested for some time in a flask with one ounce of lime-water and one ounce of distilled water, when the liquid, if stearic acid be present, loses its alkaline reaction. When the absence of stearic acid has been thus ascertained, one drachm of the sample of wax is boiled for a few minutes in a flask with two ounces of alcohol of 0·80 spec. grav., and the whole poured into one ounce of alcohol of the same strength. After a few hours the finely divided wax is collected on a filter, and washed with two

(*a*) *Pharm. Central Blatt*, No. 25, June 13, 1846; Bell's Pharm. Journal, vol. iv. No. 4, October, 1846.

(*b*) *Archiv. der Pharm.*, No. 46, p. 292; Chem. Gazette, No. 101, January, 1847.

ounces of the same alcohol. The wax on the filter is pressed between two porous tiles till nearly dry; it is then carefully transferred into a porcelain dish, and boiled with one drachm of carbonate of soda and six drachms of distilled water, stirring the whole time, until some carbonate of soda begins to form on the bottom of the dish; one ounce of alcohol of 0·80 is added to the warm mass, and the mixture stirred gradually, adding some ounces of alcohol of 0·50, until the insoluble portion is converted into fine powder. When it has become perfectly cold it is poured upon a filter, and edulcorated with alcohol of 0·50, until acetate of lead no longer produces any opacity; the whole is then evaporated to one ounce. The residue is filtered when cold, and washed with weak spirit. To further test the liquid, an excess of acetic acid is added to it; if the wax was pure, there is at the utmost only a faint opalescence, but if it contain stearine or stearic acid, a precipitate is formed, especially on shaking(*a*).

Mode of ascertaining whether Olive Oil has been sophisticated with Rape or Poppy Oil. By M. Diessel.—Pure olive oil is coloured green by ordinary nitric acid; on the other hand, one drachm of olive oil, sophisticated with rape oil and mixed with twelve drops of nitric acid, exhibited a strong yellowish grey colour. Comparative experiments with various mixtures of oil showed that this reaction was still perceptible, even with the addition of one-tenth. The adulteration with poppy oil is likewise easily detected with nitric acid, but the mixture then becomes yellowish white, and not brownish, as in the previous case. Pure nitric acid exhibits the reaction in a far less degree. Dr. Bley adds, that the samples must be judged of in the course of twelve hours after the addition of the nitric acid, as pure olive oil is likewise coloured more or less brown after a longer interval(*b*).

Adulteration of Iodine.—Herberger observes, that in consequence of the high price of iodine this substance is very frequently adulterated; thus in one specimen he found radiated black sulphuret of antimony. Still more deceptive is the adulteration with artificial plumbago. This, however, is easily discovered by volatilizing the iodine at a low heat, and afterwards applying a strong degree of heat with admission of air. In one case he found 51 per cent. of plumbago(*c*).

Another Adulteration of Iodine. By M. Righini.—The author having received some iodine from a merchant at Milan, the appearance of which excited his suspicion, he submitted it to examination; it was hard and compact, and attracted moisture when exposed to the air. It dissolved entirely in alcohol, and left no residue when treated with iron filings and water. On submitting some of it to sublimation, a residue was left, which presented the

(*a*) Buchner's *Repertorium*, No. 44, p. 153, and Chem. Gaz., No. 113, July, 1847.
(*b*) *Archiv. der Pharm.*, No. 44, p. 287, and Chem. Gaz., No. 101, Jan., 1847.
(*c*) *Jahrb. f. Prakt. Pharm.* No. 40, p. 35; Chem. Gaz., No. 77, Jan., 1847.

character of chloride of calcium. Further examination proved that this salt was present to the extent of 25 per cent(*a*).

On an Impurity in commercial Bromine. By M. Poselger.—On distilling some commercial bromine the author found that its boiling point rose from 122° to 248°, and that the colour of the residuary bromine became more and more light, until at last a colourless liquid remained. On continuing the distillation to dryness, a slight residue of coal remained in the retort. The last and lighter portions were freed from bromine by means of water and a little potash, when they yielded a colourless, oily, aromatic liquid: this body proved, on analysis, to be a bromide of carbon. Different samples of commercial bromine contained from 6 to 8 per cent. of this bromide of carbon; and it is probable that it is formed from the ether employed in the preparation of bromine(*b*).

A new Method of removing Hydrocyanic Acid from the essential Oil of bitter Almonds. By Mr. R. D. Grindley.—The following is the plan adopted by him, which, he states, proved most satisfactory. The oil was mixed with an equal quantity of water, and digested in a water bath with binoxide of mercury and small quantities of lime and protochloride of iron; time having been allowed for the decomposition of the acid, the whole was introduced into a copper retort, and subjected to distillation; the product consisted of pure hydruret of benzoyle, while bicyanide of mercury, benzoate of lime, chloride of calcium, and oxide of iron, remained in the retort, with benzoine and any excess of the ingredients employed: ten drops of this pure oil were administered to a rabbit without any injurious result, thus giving satisfactory evidence of the fact, that essential oil of bitter almonds, when pure, does not possess poisonous properties.

And Mr. Grindley states, that as numerous fatal consequences have arisen from the use of this article for domestic purposes, manufacturers of this article should give their attention to the subject, and endeavour to supply the public with a preparation at once perfectly harmless, and still possessing the agreeable flavour for which it is so highly esteemed(*c*).

Note on the Tests of the Purity of Balsam of Copaiba. By Mr. Redwood, Professor of Pharmacy to the London Pharmaceutical Society.—Mr. Redwood states that some of the tests which appear to have been most relied upon he believes to be quite valueless, and that he has no doubt that many samples of copaiba have been condemned as impure on very insufficient data. He also states that the three specimens of copaiba which he examined he knew to be genuine, and having proved by his experiments the inefficiency of the ordinary tests of its purity (viz. first, that one part of copaiba is soluble in two parts of absolute alcohol; second, that three parts

(*a*) *Journal de Chemie Medicale*, and Bell's Pharm. Journal, vol. vi. No. 4, p. 186.

(*b*) *Poggendoff's Annalen*, No. 71, p. 297.

(*c*) Bell's Pharm. Journal, vol. vii. No. i. July, 1847.

of copaiba form a clear solution with one part of solution of ammonia, sp. gr. ·960; third, that one part of hydrate of potassa in two parts of water, mixed with nine parts of genuine copaiba, will form a transparent mixture, which will continue clear after moderate dilution with water or rectified spirit; fourth, that pure copaiba dissolves a fourth of its weight of carbonate of magnesia, with the aid of a gentle heat, and continues translucent; fifth, that one part of oil of vitriol, triturated with three parts of pure copaiba, forms a plastic, reddish mass), he states, it becomes an important question to determine whether there is any other less exceptionable method. The consideration of this question involves a reference to the natural history and chemical composition of the different varieties of copaiba met with in commerce. What is the substance to be tested; is it always the same, or do different specimens of it differ in their chemical and physical characters? The substance called balsam of copaiba is an oleo-resinous exudation, possessing most of the chemical properties of common turpentine; by distillation or saponification it may be resolved into a volatile oil and a hard resin. These exist in very different proportions in different samples of copaiba. Mr. Redwood has found the quantity of volatile oil to be twice as great in some samples as in others; and consequently thinks that there is probably no simple test for a substance so variable in its composition. The method which appears to him at all satisfactory with the view of estimating its purity and value as a therapeutic agent, is, first, to resolve it into its proximate constituents, and then to examine these separately with reference to their physical and chemical properties. He mentions that the proportion of volatile oil in different specimens of copaiba met with in commerce is in some cases as low as 30, in others as high as 60 per cent.; that this volatile oil has the same ultimate composition as oil of turpentine, with which it closely coincides in the action produced by most chemical agents, but its taste, smell, and other physical characters, afford means of distinguishing it from that or any other substance with which it is likely to be mixed.

The proportion of resin, which differs little from common resin obtained from turpentine, varies also to about the same extent as the volatile oil, and is considered to possess but little medicinal activity(*a*).

M. Dublanc proposes the following as a simple test for recognizing the purity of balsam of copaiba:

Allow a drop of the balsam to fall on sized paper; dry with a gentle heat the part of the paper impregnated with the liquid; during the evaporation of the volatile part we can recognise, by the odour, if the balsam has been mixed with turpentine, the volatile oil of the latter not evaporating, according to M. Dublanc, at the same time as that of the copaiba(*b*).

(*a*) Bell's Pharm. Journal, vol. vi. No 1, July, 1846.
(*b*) *Journal de Pharmacie et de Chimie*, vol. xi. p. 276.

ACIDS.

Advantageous Method of preparing Gallic Acid. By F. Mueller.—The author recommends Braconnot's method for preparing gallic acid, modified as follows:

He boils sixteen ounces of coarsely pounded, so-called heavy, blue galls three times with eight pounds of water in a tin saucepan, strains the decoction, and lets it stand for four months in a covered earthenware pan, at a temperature of 100°–122°, now and then replacing the evaporated water, and well agitating. The mould, as well as the crusts which form, are after this time collected on a filter, slightly washed with cold water, and dried, then boiled with four parts of water, filtered, and the residue well washed with hot water. The crystals which separate from the filtered solution, on cooling, are separated from the mother ley, slightly washed, dissolved in a little boiling water, and set aside to crystallize. The crystallized acid is collected on a filter, rinsed once or twice with water, dried, then digested for several days with three ounces of alcohol and one ounce of purified animal charcoal, heated to boiling, filtered, and evaporated at a very gentle heat. The still slightly-brownish crystals are again collected on a filter, rinsed with spirit, dissolved in three parts of boiling water, and set aside to crystallize. The crystals obtained were now of a beautiful white colour, silky lustre, and perfectly pure. The mother ley yielded, on evaporation, a small quantity of brownish yellow crystals. The produce in beautiful white gallic acid amounted to two ounces and a half; in another experiment three pounds of galls yielded eight ounces(*a*).

Preparation of Valerianic Acid. By Messrs. Cap, Louradour, and Blondeau.—The authors state in their Report, that M. Righini agrees with MM. Cahours, Dumas, and Dœbereiner, that the liquid oil of valerian is an oxyacid, the base of which is a ternary radical, which he calls valerianoïle. He shows that this oil is formed of two parts, the one fixed and unaltered by cold, the other congealed at a temperature below 32° Fahr.

The former of these, treated with magnesia, introduced into a retort with a solution of tartaric acid, and distilled, yields pure valerianic acid.

M. Righini, adopting a more economical process, submits an alcoholic solution of oil of valerian to a low temperature. The solid part (hydruret of carbon, stearoptine, or valerianine) is deposited, and the valerianic acid remains dissolved in the alcohol. The alcohol is separated by distillation, and the oleaginous valerianic acid remains. On treating the solidified portion of the oil of valerian with lime, and decomposing it with sulphuric acid, pure valerianic acid is obtained by distillation, the odour of which bears some analogy to English oil of mint.

(*a*) *Archiv. der Pharm.*, No. 46, p. 153; Chemical Gaz., No. 90, July, 1846.

M. Lepage, of Gisors, has proposed the following process for obtaining valerianic acid:—He macerates valerian root, well bruised, with water acidulated with from 300 to 400 grains of sulphuric acid to every thirty-two ounces of the root operated upon; it is afterwards pressed, and the liquor saturated with carbonate of lime (added in small quantities at a time, until effervescence ceases, and the liquor no longer reddens litmus paper; it is then put over the fire, and constantly stirred until it boils. The liquor is filtered while hot, and evaporated over a water bath until it attains a syrupy consistence. Crystals of valerianate of lime are formed on cooling, which are not removed for several days, and which may then be pressed and purified by animal charcoal to render them white. On decomposing this valerianate of lime with oxalic acid, valerianic acid is obtained in a diluted state. Messrs. Cap, Louradour, and Blondeau state that they have repeated this process with the greatest care, but were not able to confirm the statement of M. Lepage(*a*).

On the Preparation of Valerianic Acid. By Dr. Aschoff.—On distilling fifteen pounds of valerian root, with the addition of diluted sulphuric acid, the author obtained eighteen drachms two scruples and a half of oily valerianic acid; and the aqueous liquid was still so strongly acid that it saturated several ounces of soda. The author obtained nearly the same result in a second experiment. The residue in the still was mixed with four ounces and a half of sulphuric acid, and again distilled; the acid product saturated five ounces of carbonate of soda. After evaporation the residue was mixed with a corresponding quantity of sulphuric acid, and then yielded, on distillation, two ounces and a half of a mixture of acetic and formic acids. On separating these two acids by peroxide of mercury, the greater portion was found to consist of acetic acid. The amount of acetic acid is still further increased when the root is digested with water for thirty days previous to distillation; when, on the contrary, the root is placed for one or two days with water in a cool spot, and then distilled, as large an amount of oily valerianic acid is obtained as in the first mode of preparation, and it is free from any foreign admixture. Dr. Aschoff found that most acid is obtained from the root gathered in the spring from dry localities, when kept a few months. When the whole of the valerianic acid has been removed by distillation of the root with water, the contents of the still always exhibit a strong acid reaction, arising from the presence of a resinous substance and free malic acids. The formic and acetic acids are combined with lime in the root, and consequently the addition of sulphuric acid is not to be recommended(*b*).

Test for Sulphureous Acid. By M. Heintz.—The following very characteristic test is recommended by M. Heintz for detecting the minutest trace of sulphureous acid. The substance to be examined, dissolved in water or hydrochloric acid, is heated with a solution

(*a*) *Journal de Pharmacie et de Chimie*, vol. ix. p. 97.
(*b*) *Archiv. der Pharm.*, No. 48, p. 275.

of protochloride of tin in hydrochloric acid, until the solution boils. If the solution contains much sulphureous acid, sulphuret of tin will be precipitated; if, on the other hand, the sulphureous acid was present only in a minute quantity, there will be no precipitate formed, the liquid will be but slightly coloured yellow, and it will acquire the smell of sulphuretted hydrogen. The addition now of a few drops of solution of sulphate of copper will immediately afford a brown precipitate of sulphuret of copper.

This method of detecting the presence of sulphureous acid, it will be perceived, is but a modification of that proposed more than fifty years ago by Pelletier, and since recommended by M. Girardin(*a*).

Concentration of Commercial Nitric Acid.—Mr. Redwood states, that as some of the preparations of the Pharmacopœia require nitric acid, sp. gr. 1·5, it was desirable to be able to obtain it readily, as it is very prone to undergo decomposition when exposed to the light, and therefore ought to be made in small quantities when required. The process which he recommends is that described by M. Millon some years ago. It consists in distilling the commercial nitric acid, sp. gr. 1·42 (mixed with its own volume of oil of vitriol), by the heat of a sand-bath cautiously applied, by which a quantity of acid, equal to two-thirds of that of the nitric acid introduced, might be drawn over, and that this acid would have a specific gravity 1·514 to 1·52. Mr. Redwood states that Millon and other chemists had stated that the nitric acid thus obtained was always contaminated with sulphuric acid; but he (Mr. R.) had found, from repeated experiments, that if care was taken not to apply more heat than was necessary to bring over the nitric acid, and not to push the distillation too far, the distilled acid was quite free from sulphuric acid, and was in every respect as pure as that made by the process of the Pharmacopœia; and that in some respects this process possessed advantages over that of the Pharmacopœia, viz., that the acid produced was stronger, and less coloured by nitrous acid(*b*).

On the Presence of Chloride of Lead in Commercial Muriatic Acid. By Dr. A. Vogel, Jun.—The usual impurities hitherto detected in muriatic acid are, for the most part, derived from the sulphuric acid, which is used for decomposing the common salt. They consist of sulphureous, sulphuric, and nitrous acids, chlorine, and chlorides of arsenic, tin, iron, and even selenium.

Dr. Vogel found, that a commercial muriatic acid contained none of the above-mentioned impurities, with the exception of slight traces of chlorine and iron, but that it always gave a black precipitate with sulphuretted hydrogen, which arose from the presence of a large portion of chloride of lead. When diluted with water, small crystals of chloride of lead were gradually formed, for this

(*a*) *Journal de Pharm.*; Bell's Pharm. Journal, vol. v. No. 10, April, 1846.
(*b*) Bell's Pharm. Journal, vol. vi. No. 7, December, 1846.

substance is more soluble in concentrated than in diluted acid. The chloride of lead (which amounts to about 1 per cent. of the acid) is to be ascribed to the circumstance of the common salt having been decomposed, and the acid distilled, in leaden vessels, which are in use in several manufactories(*a*).

New Test for Prussic Acid. By Professor Liebig.—The behaviour of the higher sulphurets of ammonium towards prussic acid furnishes an admirable test for this acid. Two or three drops of a prussic acid which has been diluted with so much water that it no longer gives any certain reaction with salts of iron, by the formation of prussian blue, when mixed with a drop of sulphuret of ammonium, and heated upon a watch-glass until the mixture has become colourless, yields a liquid containing sulphocyanide of potassium, which produces, with persalts of iron, a very deep blood-red colour, and with persalts of copper, in the presence of sulphureous acid, a perceptible white precipitate of the sulphocyanide of copper(*b*).

The Acid of Elder Berries. By M. A. Thebierge, of Versailles. —M. A. Thebierge, on making an analysis of the juice of elder berries, found that it contained a large proportion of citric acid. The following is the method by which he states it can be easily procured. The clear juice is treated, while cold, with chalk, then rapidly filtered through fine linen; the citrate of lime, nearly white, is precipitated in the course of an hour or two, and furnishes sufficiently consistent plates. The precipitation can be assisted by means of gentle ebullition.

The citrate is decomposed by weak sulphuric acid; the liquid, when filtered and concentrated, affords crystals of citric acid(*c*).

ALKALOIDS.

Quinoidine and amorphous Quina. — These substances having latterly excited considerable interest among pharmaceutical chemists, as regards their importance as cheap substitutes for the ordinary sulphate of quinine, we subjoin the following method of their preparation, as described by the patentee, Mr. Bullock, of London.

Preparation of purified Quinoidine, or Chinoidine.—Take three pounds of the residue of quina manufacture, termed chinoidine (which should be soluble in alcohol and in dilute sulphuric acid, and insoluble in water); nine ounces, by measure, of concentrated sulphuric acid diluted with one gallon of water; and, dissolving the chinoidine therein, pass sulphuretted hydrogen through the solution. In nine hours (for the purpose of precipitating metallic matters and other impurities) filter the mixture through paper, then boil to drive off excess of sulphuretted hydrogen; add an alkali or alkaline carbonate, to precipitate the chinoidine: if an alkaline car-

(*a*) Buchner's *Repertorium*, 2 R. Bd. 37, pp. 313, 315; Bell's Pharm. Jour., vol. v. No. 12, June, 1846.

(*b*) Liebig, *Annalen.* (*c*) *Journal de Pharm.*, vol xii. p. 178.

bonate, add three pounds of carbonate of soda dissolved in one gallon of distilled water. Wash well the precipitate thus obtained with distilled water, and dry it over a water bath; towards the conclusion of the drying, place it in a chloride of calcium bath, and heat it a few degrees higher than 212°: reduce it to powder, and keep it in well-stoppered bottles.

Preparation of amorphous Quina.—Take three pounds of chinoidine as before, or in the purified state, as above described (for this purpose it is well to use it before it is fully dried); mix it well with twice its weight of pure sand, and digest it in nine parts of sulphuric ether, specific gravity ·735; stir the mixture three or four times during the digestion, which should continue for twelve hours, and pour off the solution. To the residue add nine parts of fresh ether, and proceed as before; mix the two solutions, and allow them to settle. When perfectly bright, pour off the fluid from the sediment into a retort or suitable vessel, and distil off the ether by means of a water bath. The substance left in the vessel is to be dried in the same manner as is directed for the purified chinoidine(*a*).

On Aloetine. By M. E. Robiquet.—To obtain the aloetine or purified aloes, commercial aloes, reduced to powder, was exhausted with cold distilled water. This solution was evaporated over a water bath until reduced to one-half, and an excess of neutral acetate of lead was then added, which threw down a light, flocculent, yellow precipitate. On adding a sufficient quantity of ammonia to the supernatant solution, the precipitated oxide of lead carried down all the aloes contained in the liquor, forming a kind of lake, of a pure orange yellow colour, passing in a few minutes, under the influence of the solar light, to a greenish yellow. This lake quickly separated, and, washed with boiling water, was decomposed by a current of sulphuretted hydrogen, atmospheric air being excluded. On the conclusion of this operation the sulphuret of lead was covered by a perfectly colourless supernatant solution, which, on being carefully decanted, and evaporated *in vacuo*, afforded no crystals, but dried in scales, having the appearance of a kind of varnish, with a very slight tint of yellow. Aloetine thus obtained is in the form of nearly colourless scales, if the atmospheric air has been as much as possible excluded. It is very soluble in water and in alcohol, little soluble in ether, and completely insoluble in the fixed and essential oils. If the aloetine be dried in contact with air, the scales, instead of being colourless, will have an intense red colour, due to a slight absorption of oxygen; but, with the exception of the difference in colour, it undergoes no modification in its chemical properties. The process may be rendered, therefore, much more easy by drying the product over a water bath, when it is not desired to obtain the aloetine in a state of absolute purity. Aloetine possesses in a high degree the purgative properties and bitter taste of ordinary aloes.

(*a*) Bell's Pharm. Jour., vol. vi. No. 7, Dec. 1846.

For medicinal use eight parts of aloetine are equivalent to ten parts of genuine Socotrine, and fifty parts of Cape aloes(*a*).

A new and economical Method for the Extraction of Strychnia. By M. J. P. Molyn.—Mix nine pounds of nux vomica, in coarse powder, with water, so as to form a thin paste. Keep this at a temperature of from 68° to 78° Fahr. for several days, when fermentation will manifest itself by the disengagement of a large quantity of carbonic acid. The mixture is to be daily stirred, so that the whole of the powder may be exposed to the fermentation. (M. Molyn thinks that when the mashed seeds are previously boiled for two or three hours, so as more completely to dissolve the gummy matter, the process is abridged.) The fermentation is completed in eighteen or twenty days, and is indicated by the cessation of the disengagement of gas. The mixture is then passed through a hair sieve and pressed. The residue is boiled two or three times, according to the quantity of water employed. The liquids are left to become clear by deposition, and are then evaporated to about three gallons; then add nine ounces of quick-lime in powder, well-stirring the precipitate; let it stand for six or eight hours, then separate the precipitate, and submit it to strong pressure. Heat the liquid to the boiling point, and add a slight excess of sulphuric acid; sulphate of lime is formed, which is allowed to subside, and the supernatant liquor is evaporated to about four pints; to this one ounce of powdered quick-lime is added, and the process above described repeated. The precipitate resulting from this process is pressed and added to the former; they are then dried and reduced to a fine powder. This powder is digested in about ten pints of proof spirit, with a gentle heat. The spirit dissolves the brucia, the colouring matter, and a little of the strychnia, which may be recovered by evaporating the liquid and allowing it to crystallize. The precipitate, thus freed from brucia and colouring matter, and reduced to powder, is digested twice, in ten pints of spirit of wine, specific gravity ·823. The solutions, which are nearly colourless, are filtered, and four-fifths of the spirit recovered by distillation. On allowing the remaining solution to cool and stand for a day, the strychnia will be found at the bottom of the vessel in the form of a white, crystalline powder, in a yellowish supernatant liquor. The liquor is to be decanted off, and the strychnia washed with proof spirit, which removes any remaining portion of brucia, and renders it chemically pure by one crystallization(*b*).

Test for Strychnia. By Mack.—Marchand has shown, in the *Journal de Pharmacie et de Chimie*(*c*), that when strychnia is rubbed with peroxide of lead and sulphuric acid containing some nitric acid, it is immediately oxidized and a blue pigment formed, which becomes violet, then gradually red, and after a few hours yellow.

(*a*) *Journal de Pharmacie*, and Bell's Pharm. Jour. vol. vi. No. 7, Dec., 1846.

(*b*) *Jour. de Pharmacie d'Anvers*, and Bell's Pharm. Jour., vol. vi. No. 10, April, 1847.

(*c*) Sept., 1843, p. 200.

This test is so delicate that one-thousandth of a grain of strychnia can be discovered by it: but as peroxide of lead is not usually found in chemists' shops, Mack substituted peroxide of manganese, and obtained similar results. With this test strychnia can be detected in powdered nux vomica. If diluted nitric acid be applied to the powder or to strychnia, and to these be added some finely powdered oxide of manganese, and afterwards a few drops of oil of vitriol, a dark blue colour is instantaneously produced, but it soon changes to violet, then to pink, and at last to yellow. On heating the mixture, the phenomena occur much more rapidly. With brucia, morphia, narcotina, and quina, no change was produced; and with strychnia the blue, violet, and red colours could not be produced, when chlorate of potassa was substituted for peroxide of manganese, because, probably, the chlorine effects other changes in the organic matter, not oxidizing, but rather dehydrogenizing it(*a*).

Test for Strychnia. By Otto.—Instead of the brown peroxide of lead, Otto employs a small quantity of a solution of chromate of potash, which, added to a solution of strychnia in concentrated sulphuric acid, produces immediately a magnificent violet colour, and much more distinctly and more beautifully than the brown, pulverulent, hyperoxide of lead(*b*).

Researches on Gentianine. By Dr. Baumert.—Gentianine was first considered to be the bitter and medicinal principle of the gentian root, and subsequently, after it had been prepared by Tromsdorff pure and free from the bitter principle of the root, it was looked upon as a colouring substance, and called by Lecomte *genticine.* The following investigation makes us acquainted with the composition and chemical nature of this body. To prepare it the gentian root was first freed from a portion of the bitter extract by exhaustion with cold water, then dried again, and extracted with alcohol. On removing this by distillation, a brown, resinous mass, of an excessively bitter taste and acid reaction, remains. On pouring water over it, light brown flakes separate, while the bitter principle, the acid, sugar, &c., dissolve in the water. The precipitate thrown down by water from the syrupy residue is purified as much as possible from the bitter substance by washing; it then contains gentianine, a caoutchouc-like substance, fat, and still some of the bitter principle. The fat is removed by treatment with ether, and the residue again dissolved in strong alcohol, which, upon evaporation, leaves a crystalline mass, still possessing a bitter taste, and containing a mixture of resin. The gentianine is at last obtained pure by frequent crystallization, in light, yellow, acicular crystals, as the gentianine is somewhat soluble in water, and still more so in ether. Only one drachm of gentianine was obtained from twenty pounds of the root, but even this amount was greater than that obtained ac-

(*a*) Buchner's *Repertorium;* Bell's Pharm. Journal, vol. vi. No. 4, Oct. 1846.

(*b*) *Pharm. Central Blatt.*, Dec. 30, 1846; Bell's Pharm. Journal, vol. vi. No. 10, April, 1847.

cording to the process advised by Lecomte, which is based upon the fact that the gentianine is not precipitated by the neutral acetate, but only by the basic acetate of lead, so that a great portion of the impurities can be removed by a solution of the first salt.

Gentianine crystallizes in slender, pale yellow, tasteless needles, and is very sparingly soluble in water, and dissolves best in boiling alcohol. Gentianine has no reaction upon the vegetable colours; it is a neutral or indifferent body, which combines with acids and bases without parting with the elements of water(*a*).

An advantageous Method for preparing Nicotine. By M. Schloesing.—Tobacco is treated with water, and the solution concentrated. The extract is dissolved in alcohol, which, after decantation, is likewise concentrated. The last extract is now treated with potash, then agitated with ether, which dissolves the nicotine, and also some foreign substances, which are got rid of by precipitating the alkaloid in the state of oxalate. This precipitate is washed by agitating it with ether, then treated with potash, again dissolved in ether, and submitted to distillation. The residue of the distillation is coloured, but limpid, and contains, besides nicotine, water, ether, and ammonia. A temperature of 284°, maintained for twelve hours, and assisted by a current of dry hydrogen, suffices to expel these three bodies, so that the nicotine passes pure and colourless, when the temperature is subsequently raised to 356°. Two pounds of good tobacco are capable of yielding by this process from an ounce and a half to an ounce and three-quarters of nicotine(*b*).

On an Impurity occurring in commercial Aqua Ammoniæ. By Douglas Maclagan, M. D., F. R. S. E.—Dr. Maclagan states that, having had occasion to add nitric acid to a fluid containing an excess of ammonia, he was perplexed by observing that the liquid assumed a deep red colour passing to purple. He at first suspected that it was owing to some impurity in the nitric acid, and repeated the experiment with some pure nitric acid, which he prepared himself, and a similar result followed. On mentioning the circumstance to Dr. Anderson, he assisted him in making some experiments to determine the nature of this impurity, and they found it was owing to the presence of a considerable amount of the volatile substance called *pyrrhol*, discovered by Runge, and a portion of what was probably naphthaline.

The following were the experiments to which this impure aqua ammoniæ, which was quite colourless, was subjected :

1st. The addition of an excess of nitric or sulphuric acid caused a rapid red coloration, passing into a purple.

2nd. The ammonia was supersaturated with muriatic acid, and a clean shaving of fir-wood inserted into the fluid; it speedily became dyed of a rich purple. This is characteristic of pyrrhol.

3rd. A portion of the ammonia was supersaturated with sulphuric acid and distilled. The distilled liquor had a marked odour of naphthaline; and crystalline-looking particles (apparently of this

(*a*) Liebig, *Annalen*, No. 62, p. 104. (*b*) *Compt. Rend.*, Dec. 21, 1846.

substance) floated in it. It was tested by muriatic acid and the fir-wood, and gave very strongly the colour characteristic of pyrrhol.

4th. The residue of the distillation in last experiment, which, of course, contained all the ammonia in combination with the sulphuric acid, was mixed with a small quantity of caustic potash. The smell of picoline was distinctly perceived.

Dr. Maclagan states that it is easy to see how these impurities come to be present in the ammonia. It is well known that most of the ammonia of commerce is derived from the watery liquor of gas works, from which it is prepared by converting it into sulphate or muriate, and decomposing the salt so obtained by lime. In the preparation of this impure aqua ammoniæ, it is obvious that this process has not been followed. The manufacturer, in order to save the expense incurred by converting it into sulphate or muriate, has contented himself with procuring it by direct distillation, and thus it contains the other volatile ingredients of the gas liquor. It is hardly necessary to say that such aqua ammoniæ is quite unfitted for chemical or pharmaceutical purposes(*a*).

Since we read this paper, suspecting from the odour of some aqua ammoniæ in our possession, that it contained the impurities above described, we repeated Dr. Maclagan's experiments, and found it to afford the same reactions as the Doctor has detailed.

ALKALINE, EARTHY, AND METALLIC SALTS.

M. Dupasquier having experienced the therapeutic value of the iodide of iron when in the state of protiodide, M. C. Callaud proposes the following method of obtaining this salt by double decomposition:

Take one part of crystallized sulphate of protoxide of iron, 161·52; one part of iodide of potassium, 206·94; reduce each salt separately into a fine powder, and triturate the mixture of the two salts; then treat it with alcohol at 85° per cent., which only dissolves the iodide of iron that is formed. The alcoholic solution has all the characters of the protosalts of iron. He states that the following formula may answer better for certain pharmaceutical preparations having iodide of iron for a base.

Take three parts crystallized sulphate of protoxide of iron, four parts of iodide of potassium: mix as before.

It is important to choose the sulphate of iron in small translucent crystals, which exactly represent the protosalt with seven proportions of water. The iodide of potassium ought to be perfectly neutral and pure. To be satisfied of the purity of the substances, the mixture of the two salts, when dissolved in distilled water, should not afford a greenish or yellow-coloured tinge in the mixture, which would indicate the employment of a basic iodide of potassium, or a sulphate of iron partially peroxidised. He also re-

(*a*) Monthly Journal of Medical Science; Bell's Pharm. Journal, vol. vi. No. 1, July, 1846.

commends the following formulæ for this salt in the form of pills, tincture, and wine:

Pills of Protiodide of Iron.—

	Gram.(*a*)	Cent.
Crystallized protosulphate of iron, . .	1	60
Iodide of potassium, ...	2	10
Gum tragacanth, ...	0	30
Sugar, ...	1	00

Syrup sufficient to form the mass into thirty-six pills. Each pill contains fifty-two millegrames of dry iodide of iron, and twenty-six millegrames of sulphate of potash.

Tincture of Protiodide of Iron.—

	Gram.	Cent.
Crystallized protosulphate of iron, . .	0	80
Iodide of potassium, ...	1	10
Alcohol at 85° per cent., ...	16	00

Triturate the two salts as before, dissolve the iodide of iron in the alcohol, and filter. It is then to be kept in a well-stoppered bottle completely filled. A small excess of iodide of potassium gives it more stability; sixteen grammes of the tincture contains eighteen grammes of iodide of iron.

Iodide of Iron Wine.—

	Gram.	Cent.
Crystallized protosulphate of iron, .	0	80
Iodide of potassium, ...	1	10
Sherry wine, ...	32	00

The two salts being finely powdered, add a few drops of wine to the mixture, quickly triturate it, and dissolve in the rest of the wine, and filter.

Thirty-two grammes of the wine contain eighteen grammes of protiodide of iron, besides a little sulphate of potash. Keep it in a well stoppered bottle completely filled. All these preparations by double decomposition being easily and quickly prepared, need not be kept ready made(*b*).

On a new Method of preparing Lactate of Iron. By M. Lepage.—The author proposes the following plan for the preparation of this salt, which yields satisfactory results, and is much more expeditious than the old process:

Lactate of lime, ...	100 parts.
Boiling water, ...	500 do.

Dissolve and filter.

Next dissolve sixty-eight parts of pure crystallized sulphate of

(*a*) The gramme, ... $15\frac{1}{3}$ grains Troy.
Decigramme, ... $1\frac{1}{2}$,,
Centigramme, ... $\frac{1}{6}$,,
Millegramme, ... $\frac{1}{75}$,,
(*b*) Medical Gazette and Clinical Gazette.

iron in 500 parts of distilled water, and filter; mix the two solutions in a flask, and slightly acidulate the mixture with lactic acid. The decomposition may be aided by a gentle heat, and when this is accomplished, the liquid may be filtered to separate the sulphate of lime, and afterwards rapidly evaporated in an iron or porcelain vessel; if the latter be used, some iron filings must be added. When its bulk is reduced to one-half, it may be again filtered and allowed to crystallize. The mother liquor, decanted and carefully evaporated, will yield a fresh crop of crystals. These may be collected on a funnel, washed with a little alcohol, and dried on blotting paper. The salt thus obtained is quite white and its solution in distilled water is not affected either by nitrate of baryta or oxalate of ammonia(*a*).

On the Preparation of the Lactate of the Protoxide of Iron. By M. Cassebaum.—He prepared the protolactate of iron by pouring twelve ounces of water over one ounce of milk sugar and the same quantity of iron filings, and digesting the liquid, heated to 86°, with a piece of the inner membrane of a pig's gut, about the size of the hand(*b*).

Easy Method of preparing Iodide of Potassium.—M. Pypers subjects to a moderate heat a mixture of 100 parts of iodine, 75 of carbonate of potash, 30 of iron filings, and 120 of water. The mass is to be dried, and then heated to redness; the resulting reddish powder is to be treated with water, and the solution obtained, filtered and evaporated to dryness. 100 parts of iodine yield 135 of very white, but slightly alkaline, iodide of potassium(*c*).

On the Preparation of Valerianate of Zinc. By MM. Frederking, Henny, and Dumesnil.—Frederking distils twelve pounds of valerian root with forty-five pounds of water; when twenty-five pounds have passed over, hot water is again added to the residue, and this repeated as long as the distillate reddens litmus. The fifty pounds of liquid which pass over are heated nearly to boiling, and then three ounces of crystallized carbonate of soda, dissolved in nine ounces of water, are added, so that the liquid presents a slightly alkaline reaction. The liquid is now evaporated to four pounds, and then separated by filtration from a resinous residue, which was again exhausted with three drachms of crystallized carbonate of soda, and twelve ounces of boiling water. The filtered solutions are now evaporated to eight ounces, along with three ounces of sulphate of soda, to raise the boiling point, and nine drachms of sulphuric acid added to saturate the carbonate of soda employed in excess, and distilled to dryness, when at first a limpid fluid passes over, and subsequently the hydrated acid; the latter is dissolved in water, and boiled for two hours in a retort, with recently precipitated carbonate of zinc, filtered, the residue edulcorated, and the filtered solution evaporated in a retort. The liquid which now passed over still saturated fifty grains of hydrate of baryta, from which four scruples of valeria-

(*a*) Chem. Gaz. No. 82, March 16, 1846.
(*b*) *Archiv. der Pharm.*, No. 44, p. 263. (*c*) *Jour. de Chimie Med.*

nate of quina were obtained with sulphate of quina. The concentrated solution of the valerianate of zinc, removed from the retort, was further evaporated in a dish, collecting on fine linen the saline pellicle as it appeared, which was then pressed between blotting paper: the residue, evaporated to dryness, yielded a somewhat coloured salt. With the above quantity of valerian root, six to seven drachms of zinc salt may be obtained(*a*).

Preparation of Valerianate of Zinc. By M. Lefort.—The following is the process which he states he found most successful for obtaining the salt :—

Valerian root, ...	$2\frac{2}{3}$lbs.
Water, ...	$13\frac{1}{3}$,,
Sulphuric acid, ...	3 ,,
Bichromate of potash, ...	2 ,,

Macerate for twenty-four hours the valerian, coarsely powdered, the water, sulphuric acid, and bichromate of potash, in a retort, and distil; return into the retort the first quart of water distilled; continue the distillation until it no longer reacts on litmus paper. The product is then placed in a porcelain vessel with an excess of pure hydrocarbonate of zinc; digest for two or three hours in a sand bath to 90°; evaporate the liquid (filtered whilst warm) until not more than a pint remains; then continue, with a gentle heat, the evaporation to dryness. By this method M. Lefort states he has obtained from four to five drachms of valerianate of zinc from $2\frac{2}{3}$ pounds of the root. He farther states that the root should be recently dried when used for this purpose, as he was unable to obtain the same quantity from the old root(*b*).

Adulteration of Valerianate of Zinc. By M M. Larocque and Huraut.—For some time past a substance has been sold at Paris, under the name of valerianate of zinc, which is nothing more than butyrate of zinc. It resembles the valerianate to such a degree in its physical properties, that it is impossible to distinguish them. In its chemical properties it is somewhat allied also to the valerianate, as, like it, when treated with a strong acid it yields a volatile fatty acid, of a strong, disagreeable odour, which forms with baryta a salt soluble in water and alcohol, possessing the singular property of rotating with rapidity on the surface of the water, and producing with neutral acetate of lead an oily precipitate. Like the valerianate, the butyrate of zinc possesses a peculiar odour, which, although it differs very perceptibly, is not so marked as to be appreciable by persons but little accustomed to handle these products; and this difficulty is increased if the butyrate of zinc is impregnated with essence of valerian; not merely its peculiar odour is entirely hidden, but it has acquired that of valerian itself: and it was owing to some valerianate of zinc which the authors had in their possession, emitting the odour of essence of valerian, that led them to doubt its nature, and submit it to examination.

The process by means of which they succeeded in detecting the

(*a*) *Archiv. der Pharm.*, No. 43, p. 2. (*b*) *Jour. de Pharm.*, vol. x. p. 195.

fraud was very simple. It was founded on the different action which the valerianic and butyric acids exert on a concentrated solution of acetate of copper. The characteristic reaction is very simple and decisive. From experiments which the authors made, it results that whilst butyric acid immediately forms a bluish white precipitate in a solution of acetate of copper, which renders it turbid, valerianic acid, on the contrary, produces no perceptible change, but by agitation it is converted into greenish drops of an oily appearance, which are partly deposited and which partly float on the surface of the liquid, adhering to the sides of the vessel just like a fatty substance. These drops, consisting of the anhydrous valerianate of copper, persist from five to twenty minutes, and are then converted by hydration into a greenish blue crystalline powder.

As these reactions are produced in a very marked manner only when the valerianic and butyric acids are pure or in a concentrated solution, it is therefore necessary to separate the acid of the salt under consideration. For that purpose three or four grammes of the valerianate are triturated with a little water, and then introduced into a tubulated retort, to which a small balloon serving as a recipient has been adapted; then twice or three times the weight of sulphuric acid, diluted with an equal portion of water, is poured upon the salt through the tubulature, the whole is agitated, and then heated gently, taking care as much as possible to avoid any violent ebullition: very soon a liquid passes into the recipient, which consists of nearly the whole of the acid of the salt employed and a little water. It is this liquid which is subsequently used to determine by the above reaction the nature of the product. The distillation should not be carried too far, and a greater weight of the liquid than equals the quantity of the valerianate employed should not be collected.

In order to ascertain whether the solution of acetate of copper would allow of detecting a mixture of butyric and valerianic acids, the authors found by experiment that a mixture of these two acids in different proportions, produced in the acetate of copper the reactions peculiar to each, but the appearances were not exactly of the same kind as when the acids are taken separately. In the latter case the reaction was well defined and immediate: on the one hand, when butyric acid alone was present, the liquid became turbid and deposited a precipitate; on the other, when valerianic alone was present, the liquid became less transparent, and oily drops were formed in the solution, which adhered to the sides of the vessel. In the case of a mixture, on the contrary, unless the proportion of butyric acid is very considerable relatively to that of the valerianic acid, the results are not so quickly evident. To avoid every cause of error in researches of this kind, it is necessary to employ a slight excess of the reagent, because valerianic acid displaces butyric acid from its combination with the oxide of copper(*a*).

(*a*) *Journal de Pharmacie*, June, 1846.

Double Chloride of Mercury and Quinine. By Mr. M'Dermott of Dublin.—This *new* salt is prepared in the following manner:—Dissolve separately one part of bichloride of mercury and three parts of hydrochlorate of quina in the smallest possible quantity of water; mix the two solutions; the double salt will separate in acicular crystals.

Dr. Hamilton has administered this salt for lupus in pills made according to the following formula:

℞ Chloride of mercury and quina, gr. i.
Powdered opium, gr. $\frac{1}{4}$.
Crumb of bread, q. s.

Make into thirty pills: take one three times a day(*a*).

On Citrate of Magnesia, and a Purgative Water made with this Salt. By M. Roge Delabarre.—The author states that, on making some experiments with the salts of magnesia, he had occasion to observe that the citrate of magnesia is devoid of the bitter and disagreeable taste which characterize the other soluble salts of this base; and from experiments which he made with the citrates, he states that, of all the salts of any base, the citrate is that in which the taste peculiar to the base is to the greatest extent lost. He proposes the two following formulæ for the preparation of this salt:

1st. By double decomposition from the sulphate of magnesia and citrate of soda in their atomic proportions.

2nd. By saturating a solution of citric acid with magnesia, or the basic carbonate.

The neutral citrate of magnesia prepared by either of the processes above described is a white, pulverulent, insipid salt, soft to the touch, heavier than magnesia, and soluble in water by the addition of a slight excess of the acid. This solution has a slightly acid taste, but is in no way disagreeable.

The author also proposes the following preparation for the administration of citrate of magnesia:

Seidlitz Water free from bitterness, or Purgative Mineral Water of Citrate of Magnesia.—

	Gram.	Grs.
Citrate of magnesia, ...	40	617·360
Citric acid, ...	2	30·868
Simple syrup, ...	125	2315·103
Essence of orange, q. s.		
Carbonic acid water, q. s.		

To fill a common mineral water bottle containing 750 grammes (about the size of a wine bottle)(*b*).

Note on the Preparation of Oxide of Silver. By Dr. Butler Lane.—Mr. Underwood having stated that oxide of silver forms an explosive compound when mixed with conserve of roses, or with an essential oil, Dr. Lane has republished the formula which ought to be em-

(*a*) *Journal de Pharmacie*, and Bell's Pharm. Journal, vol. vi. No. 4, October, 1846.

(*b*) *Journal de Pharmacie*, vol. xii. p. 31.

ployed in its production, and which, he states, is perfectly free from any explosive property. His formula is the following:

Dissolve four parts of the grey protonitrate of silver in distilled water, also rather more than two parts of the hydrate of potash in a separate quantity, freed by filtration from the oxide of iron, and any other impurity; mix and let stand for an hour, stirring frequently with a glass rod: the supernatant liquid will be found a solution of nitrate of potash, the freedom of which from nitrate of silver may be ascertained by taste, or by testing with hydrochloric acid, showing that complete decomposition has been effected, otherwise more solution of potash should be added; the fluid is then to be poured off, and the precipitated oxide of silver to be washed repeatedly with distilled water until it is found to remain perfectly clear, and quite devoid of all taste and alkaline reaction. The precipitated oxide is then to be drained on filtering paper, and thoroughly dried at a temperature of about 150° Fahr.

He further states that neither lime nor any other alkali will answer the purpose of decomposing the nitrate of silver as well as the potash, and that the preparation with ammonia is dangerous in the highest degree; but that, if prepared according to his formula, neither heat, friction, nor percussion will occasion any explosion. The combinations of the oxide of silver which he recommends are as follows:

1. With extract of gentian or camomile.
2. With extract of hyoscyamus, or conium, to which he often adds a small proportion of ipecacuanha.
3. With inspissated ox-gall.
4. With the aqueous extract of opium.
5. With compound cinnamon powder.

The pills should never be rolled or kept in carbonate of magnesia(*a*).

New Preparation of Quina.—A new preparation of quina has been lately introduced, for which Dr. Kingdon has given a formula: it is the diarsenite, that is, it consists of one part of arsenious acid and two of quina. The preparation is made in the following manner: he first dissolves sixty-four grains of arsenious acid and thirty-two grains of pearl ashes, or subcarbonate of potash, in four ounces of distilled water, by boiling it for about half an hour, and then makes it up to four ounces with as much water as may be required, so that each drachm may contain two grains of arsenic. He adds five drachms of this solution to two scruples of disulphate of quina, previously dissolved in boiling distilled water; immediately a white, curdy precipitate is formed, which is the diarsenite of quina. He then pours it on a filter, well washes it, and leaves it on the filter to dry. When the proportions are accurately weighed, the water is neutral, and no arsenic can be detected. It is uncrystallizable, and insoluble in water, but soluble in alcohol. He gives the one-third of a grain for a dose twice a day, and gradually increases it to three and four times

(*a*) Medical Times, and Braithwaite's Retrospect, vol. xvi., p. 355.

in the course of the day, either made into pills with bread, or in the form of powders, mixed with a little sugar or gum; of course, nothing acid must be given at the same time, as that would decompose it(*a*).

Cyanide of Potassium in Caustic Potash.—The presence of cyanide of potassium in caustic potash was discovered by Dr. Herzog whilst preparing carbonate of potash from pale-coloured argol. Even after the preparation had been boiled for several hours with water and caustic lime, the cyanide of potassium was not yet decomposed(*b*).

Test for the Presence of a Carbonate in the Bicarbonate of an Alkali. By M. Cottereau.—Chevallier, some years ago, proposed the use of potash as a means of detecting the presence of the sugar of fecula when mixed with cane sugar. The reaction which takes place is indicated by the production of a red or yellow colour, according to the quantity of sugar of fecula present. To the experiments of this chemist I may add the following:

1st. All the alkalies produce the same effect, as was observed by M. Chevallier in the case of potash, when in contact with sugar of fecula. Ammonia does not offer an exception to this rule.

2nd. All the alkaline carbonates also produce the same effect, but with carbonate of lime the effect is very feeble.

3rd. The bicarbonates of the alkalies, under similar circumstances, do not produce any change of colour.

It follows from this that a neutral alkaline carbonate may be easily distinguished from a bicarbonate by the action of sugar of fecula, and by the same means the admixture of a carbonate with a bicarbonate may be detected.

In all cases the application of heat greatly promotes the reaction alluded to(*c*).

DISTILLED WATERS.

Note on the Preparation of the distilled Water of Cherry-Laurel Leaves. By M. Deschamps d'Avallon.—The author states that, from various experiments made by him, with a view of ascertaining the best method of preserving as well as preparing this highly important pharmaceutical preparation, he has arrived at the following conclusions:

1st. That it is necessary to cut and bruise the laurel leaves before they are submitted to distillation.

2nd. That the proportion of hydrocyanic acid contained in this water diminishes with the length of time after its preparation.

3rd. That we can easily know when this water has been properly prepared, since it ought to contain in every thirty grammes, eleven months after it has been prepared, grm. 0·020 of hydrocyanic acid.

(*a*) Prov. Med. and Surg. Journal. Medicines and their Mode of Administration, by J. M. Neligan, M. D., 2nd ed. p. 391.

(*b*) *Pharm. Central Blatt*, and Bell's Journal, vol. vi., No. 12, June, 1847.

(*c*) *Journal de Chimie Medicale*, and Bell's Pharm. Jour., vol. v. No. 10, April, 1846.

4th. That by adding grm. 0·012 or grm. 0·015 of pure sulphuric acid to 100 grammes of the laurel water, we can preserve for a year or so all the hydrocyanic acid contained in it.

5th. That this small quantity of sulphuric acid can by no means injure the effect of this distilled water(*a*).

We think these observations well worthy of consideration, and that the author's experiments, which will be found detailed in the Journal above alluded to, deserve to be repeated, as we know from experience that the odour of laurel water is *per se* no criterion of its value as a therapeutic agent.

ALCOHOL AND ETHERS.

Test for anhydrous Alcohol. By Casoria.—In order to determine whether alcohol contains water, let a sample of it stand for some time in a well-closed vessel with anhydrous sulphate of copper. If water be present the latter assumes a blue colour, but it remains white if the alcohol be free from water(*b*).

Sweet Spirits of Nitre.—Mr. Curtis, of Leamington, in a note addressed to the Editor of the Pharmaceutical Journal, states that he lately had occasion to order some iodide of potassium in camphor mixture, with some sweet spirits of nitre, when the mixture became of a deep orange colour, indicating the presence of a free acid in the spirit, as some iodine had been set free(*c*).

We have noticed this, as we have found (by the ordinary test of litmus paper) that a great quantity of the spirits of nitre sold by manufacturing chemists contained free acid, and that some also contained aldehyd to a very considerable extent (which we detected by the ordinary nitrate of silver test for the presence of aldehyd); and we also noticed that when pure sweet spirits of nitre is kept for any length of time in bottles but partially filled, we could readily detect the presence of aldehyd.

Chloroform.—As this substance has latterly obtained such celebrity as an anæsthetic agent, we subjoin the mode of its preparation, as also the means of testing its purity.

Chloroform, chloroformyle, or the perchloride of formyle, may be made and obtained artificially by various processes: as, by making milk of lime, or an aqueous solution of caustic alkalies, act upon chloral; by distilling alcohol, pyroxilic spirit, or acetone, with chloride of lime; by leading a stream of chlorine gas into a solution of caustic potass in spirits of wine, &c.

The preparation used by Dr. Simpson was made according to the following formula of Dumas:

Take of chloride of lime in powder, 4 lbs.
,, water, ... 12 ,,
,, rectified spirit, ... 12 oz.

Mix in a capacious retort or still, and distil as long as a dense

(*a*) *Journal de Pharmacie*, tom. xii. Sept., 1847.
(*b*) Bell's Pharm. Journal, vol. vii. No. 1, July, 1847.
(*c*) Bell's Pharm. Journal, vol. vi. No. 5.

liquid, which sinks in the water with which it comes over, is produced.

This process, which we believe is the one generally adopted, is not free from danger, and ought not to be attempted without particular precautions, as on applying heat to the mixture of chloride of lime, spirit, and water, a violent action ensues, accompanied by a great frothing of the ingredients; so that if the still be not capable of holding eight or ten times as much as the quantity of the ingredients introduced, the still-head may be blown off with considerable violence, and the apartment filled with chlorine vapours. Immediately after this action has taken place, a dense, oily-coloured liquid passes into the receiver, where it sinks to the bottom of the water, which distils over with it. Perfectly good chloride of lime should be used, otherwise the product will be very small. The dense liquid thus obtained is impure chloroform. It is necessary to purify this by treating it with oil of vitriol and carbonate of baryta or of potash, and by subsequently distilling it from chloride of calcium, after washing it repeatedly with water. The product will now be pure, if sufficient time and pains have been devoted to the latter part of the process. Not unfrequently, however, it will be found still to retain a minute portion of alcohol, the presence of which is considered by some persons to be prejudicial. Messrs. Morson and Hooper state, that as it is necessary to distinguish between chloroform and chloric ether, they consider the greater specific gravity of chloroform, its insolubility in water, and the difficulty of igniting it, will serve to point out the difference between it and chloric ether. M. Mialhe, in a communication recently made to the Academy of Sciences of Paris, mentions the following among the chemical properties of chloroform. It rapidly evaporates, producing great cold when dropped on the skin. It has neither an acid nor an alkaline reaction, but is perfectly neutral when pure. It is readily dissolved by alcohol and ether, but is again separable by water. It readily deoxidizes nitric acid by the aid of a moderate heat; gold is not dissolved by this mixture, hence no hydrochloric acid is formed, and no chlorine evolved; chloroform does not dissolve gold, nor does it bleach vegetable colours, hence it contains no free chlorine: potassium floats in it without decomposing it, and no gas is evolved. (If much alcohol or ether were present, there would be an evolution of hydrogen.) It forms a milky liquid, but does not enter into combination with caustic potash. It gives an oily-looking stain to paper, easily dissipated by heat; the vapour is not inflammable, but it renders the flame of a wax candle smoky and carbonaceous like chlorine. What is commonly sold as chloric ether is a solution of chloroform in alcohol. The alcohol may be detected and separated by water, as in the washing of ether; it may be also detected by potassium; and as chloroform boils at 140° and alcohol at 172°, it is probable that Dr. Ure's method of detecting pyroxilic spirit in alcohol by the temperature of ebullition, might be applied to the detection of alcohol in chloroform. Some specimens of chloroform, which have been offered for sale at a low

price, have evidently been made from pyroxilic spirit, the taste and smell indicating their origin. M. Mialhe states, as the result of his researches:

1st. That pure chloroform, applied to the skin or mucous membrane, produces simple redness, without cauterization or vesication. It acquires, however, caustic properties when mixed with a small quantity of absolute alcohol.

2nd. That the chloroform used in medical practice, which has caused vesication of the lips or nostrils, with irritation of the bronchial tubes, could not have been pure.

3rd. That this chloroform contains a certain quantity of anhydrous alcohol. The presence of this liquid in chloroform was suspected by MM. Soubeiran and Gerdz, and it has been demonstrated by analysis. The alcohol may act by combining with and coagulating the albuminous fluids of the body, and thus giving rise to the local effects of irritation; hence, before using chloroform vapour in surgical practice, it is indispensably necessary to ascertain whether it be pure. M. Mialhe finds that the following is a very delicate test of the presence of alcohol in chloroform:—Place some distilled water in a tube or glass, and drop on it a small quantity of chloroform. The greater part sinks immediately to the bottom of the vessel, owing to its great density (sp. gr. 1·48). A small quantity floats by repulsion, but may be made to fall in small globules by agitation. If the chloroform be pure, it remains transparent at the bottom of the vessel; but if it contain only a small portion of alcohol, the globules acquire a milky opacity(*a*).

TINCTURES AND WINES.

On the Preparation of Alcoholic Tinctures. By J. Personne.—The objects of the present memoir, for which the author received the prize proposed on this subject by the *Société de Pharmacie*, were, first, to ascertain whether the proportion of alcohol at present employed is sufficient to dissolve the whole or at least the greatest possible amount of the principles contained in the substances, and if not, to determine the best proportion to be used; and, second, to ascertain the most suitable degree of strength the alcohol should possess to dissolve the active principles of the materials. In order to determine the amount of alcohol requisite, it was necessary to macerate the substances under examination with variable quantities of spirit, then to obtain the entire amount of the tincture, and to evaporate it in order to obtain the weight of the matters in solution. To accomplish this the author found the following process to answer best:—A weighed quantity of substance was macerated during a suitable time in a given proportion of alcohol; the maceration being completed, the whole was brought upon a filter, the quantity of filtered tincture accurately weighed, then evaporated in the water bath, and finally, the extract obtained dried in a chamber heated

(*a*) Bell's Pharm. Journal, vol. vii. No. 6, Dec. 1847; and vol. vii. No. 7, Jan. 1848.

from 158° to 194°, until it no longer altered in weight. The weight of this extract, subtracted from that of the evaporated tincture, yielded the weight of alcohol contained in that quantity of tincture; a simple equation then suffices to ascertain the total weight of extract which the whole of the tincture would have yielded. In order to ascertain the strength of the alcohol most favourable for the preparation of tinctures, the author determined the quantity of the active principles contained in the substances where they were well defined and characterized principles; such, for instance, was the case with the barks, nux vomica, and jalap. These determinations were made in the following manner:—For the barks and the nux vomica the tincture was evaporated in the water bath, and the extract obtained treated with acidulated water; the filtered liquid was precipitated by subacetate of lead to remove all foreign matters, and the excess of lead having been separated by sulphuretted hydrogen, the alkaloids were thrown down by a solution of pure tannin, and estimated in the state of tannates. But although, for the above substances, the results may be readily checked, it is not so for the greater number, the active principles of which do not possess well-defined chemical properties. How, for instance, in the case of hemlock, belladonna, rhubarb, gentian, &c., is it possible to determine whether the tincture prepared with alcohol of 0·865 contains more active principles than that prepared with alcohol of 0·923?

Among these substances there are some, the properties of which reside in a bitter principle, as rhubarb, gentian, wormwood. In such cases the author took two fixed quantities of tinctures, prepared with alcohol of different degrees, and ascertained by diluting those which required the greater quantity of water for the bitterness to disappear. Unfortunately these means of investigation cannot be employed for a large number of substances, a defect which it has not been found possible to remedy; it is only by reasoning, founded on the chemical analysis of these substances, that the author has selected the degree of alcohol suitable. The only method, in his opinion, of arriving at the desired object, would be to experiment in practice with tinctures prepared from such substances, and alcohol of different degrees of strength. The degrees of alcohol employed in these experiments are five in number, viz., alcohol of 0·833, 0·865, 0·889, 0.923, and 0·942, specific gravity. From the experiments detailed, amounting to no less than 300 upon thirty-two different substances, the author considers himself justified in drawing the following conclusions:

1st. The different degrees of strength of alcohol prescribed by the French Codex (0·848, 0·865, 0·923) are not always the most favourable for dissolving the greatest quantity of the principles contained in the substances employed in the preparation of tinctures.

2nd. These degrees can scarcely be admitted in a general manner, except for a certain number of substances; experiment alone can show which is best suited for each.

3rd. The proportion of four parts of alcohol to one of substance, as prescribed in the Codex, is scarcely sufficient in any single case to dissolve all the soluble parts of the substances.

4th. The quantity of alcohol sufficient to exhaust a substance entirely is in general five parts of alcohol to one of substance.

5th. The quantity of alcohol is always sufficient to exhaust a substance when this vehicle is in sufficient quantity to moisten it through, and when the substances are of an herbaceous nature, as leaves, &c.

6th. The alcohometric degrees most suitable for the preparations of the different tinctures are alcohol of 0·865, 0·923, and 0·942, specific gravity. These alcohometric degrees are arranged in the following table with the substances for which they are suited. To each of the tinctures is added the quantity of substance equivalent to one gramme of the tinct ure.

In concluding, the author mentions a singular fact which occurred in nearly every experiment: almost every time that the proportion of alcohol was greater than required to exhaust the substances, he always obtained less extract than when the proportion was just sufficient; that is to say, the quantity of extract diminished in proportion as the quantity of alcohol was increased.

Table of the different Degrees of Alcohol to be employed for each Substance.

			In round Numbers.
Take one part of substance and five parts of alcohol, of 0·865 spec. grav. for the tinctures of,	Yellow Bark,	1 grm equiv. to	0·20 powder.
	Jalap,	,, ,,	0·19 ,,
	Cinnamon,	,, ,,	0·20 ,,
	Pyrethrum,	,, ,,	0·20 ,,
	Castor,	,, ,,	0·18 ,,
	Myrrh,	,, ,,	0·19 ,,
Take one part of substance and five parts of alcohol, of 0·923 spec. grav. for the tinctures of	Rhubarb,	,, ,,	0·18 ,,
	Grey Bark,	,, ,,	0·20 ,,
	Ipecacuanha,	,, ,,	0·19 ,,
	Nux Vomica,	,, ,,	0·20 ,,
	Gentian,	,, ,,	0·18 ,,
	Red Bark,	,, ,,	0·20 ,,
	Digitalis,	,, ,,	0·18 ,,
	Senna,	,, ,,	0·19 ,,
	Squills,	,, ,,	0·17 ,,
	Black Hellebore,	,, ,,	0·18 ,,
	Contrayerva,	,, ,,	0·20 ,,
	Polygala,	,, ,,	0·18 ,,
	Ginger,	,, ,,	0·20 ,,
Take one part of substance and five parts of alcohol, of 0·942 spec. grav., for the tinctures of	Valerian root,	,, ,,	0·19 ,,
	White hellebore,	,, ,,	0·18 ,,
	Colchicum (Corneus),	,, ,,	0·19 ,,
	Aconite,	,, ,,	0·19 ,,
	Hemlock,	,, ,,	0·18 ,,
	Belladonna,	,, ,,	0·19 ,,
	Hyoscyamus,	,, ,,	0·18 ,,
	Stramonium,	,, ,,	0·18 ,,

With respect to the mode of preparing these tinctures, the author considers that it has been clearly proved that, of all the methods proposed, that of cold maceration is the most suitable(*a*).

On the acetous Fermentation of some of the Alcoholic Preparations of the Pharmacopœia. By Mr. William Bastick.—The author states that, contrary to the prevailing opinion that the tinctures of the Pharmacopœia are very stable preparations, he has found that various ones kept many months in the ordinary circumstances in which they would be placed by their consumption in a druggist's shop, such as being in bottles half filled, in a temperature varying from 60° to 80°, and occasionally admitting fresh air, were found on examination by the proper tests to have undergone the acetous fermentation in a greater or lesser degree; the alcohol having been converted into acetic acid.

The tinctures were generally diminished in colour and taste, and contained a precipitate, a portion of which was re-soluble on the addition of a sufficient quantity of spirit to supply the place of that decomposed. This circumstance shows that a part of the precipitate was caused by the decomposition of the alcohol, and a part by the destruction of the vegetable principles themselves. When the tinctures in this condition were completely exposed to the action of the atmosphere at a sufficient temperature, the alcohol contained in them was speedily and entirely converted into acetic acid.

The proof spirit tinctures most liable to the acetous fermentation are those which contain proximate principles in solution which are prone, *per se*, to decay, the spirituous menstruum not having sufficient antiseptic power to permanently resist their decomposition.

The tinctures made with rectified spirit are not susceptible of any change of a similar character, neither are the tinctures above spoken of, when the strength of the spirit is considerably increased. That the acetous fermentation is induced in the tinctures by the presence of bodies in a state of change acting as a ferment, is clear from the fact that a mixture of alcohol and water will not ferment without the presence of some such body. It is also evident that the vegetable substances held originally in solution have been subject to a material change by the loss of colour and taste of the tincture, and by its containing a precipitate, a portion of which was insoluble in a mixture of alcohol and water. Some of the preparations most prone to this change are the tinctures of senna, rhubarb, calumba, henbane, digitalis, bark, hops, aloes, compound tincture of cinnamon, compound decoction of aloes, concentrated infusions, fluid extracts, and all similar preparations, especially those which are weaker in spirit than the tinctures.

The author further states, that as druggists are forbidden to alter the constitution of any of the preparations of the Pharmacopœia, there is but one course open to them, and that is, as far as

(*a*) *Jour. de Pharm.*, Dec., 1845.

circumstances will permit, to keep the preparations in bottles well filled and well closed, and in a low temperature, which are the conditions found to be least favourable to the development of the acetous fermentation(*a*).

On the changes of Composition in Tincture of Iodine according to the length of time it has been prepared. By M. Guibourt.—M. Guibourt calls attention to the variation which the alcoholic tincture of iodine presents in its composition and therapeutical effects, according to the greater or less space of time which had elapsed since its preparation, and cites as an instance the mixture employed by M. Velpeau in the treatment of hydrocele ; if the tincture be recently prepared according to the formula of the Codex (one part of iodine to twelve of alcohol, of 86° Cent.), and double its weight of water be added to this tincture, almost the whole of the iodine will be precipitated in the form of blackish particles, which readily separate on being allowed to rest, and the supernatant liquid will be scarcely coloured. If the clear transparent part be used, it will produce, probably, only a slight degree of irritation caused by the alcohol. If the liquid be shaken, and injected while turbid, a mass of solid particles of iodine will be deposited on the tunica vaginalis, which might produce an irritation so intense as to become dangerous.

If the tincture has been prepared four or five months, the following changes would have taken place in it during that time:—A part of the iodine will have united with the hydrogen of the alcohol, forming hydriodic acid, which, uniting with a part of the iodine, would form the ioduretted hydriodic acid; and this last is not precipitated by water. When, therefore, this tincture of four or five months' date is mixed with double its weight of water, there is still, it is true, a precipitation of iodine, but three or four times less abundant than in the recent tincture. The supernatant liquor, on the contrary, will be highly coloured, and the effects of the mixture will, undoubtedly, be different from those obtained with the recently prepared tincture employed either clear or turbid.

Finally, if a tincture a year or eighteen months old be used, it will scarcely be affected by water, and a still different therapeutic effect will be produced. This being the case, M. Guibourt concludes that the tincture of iodine is a medicament variable in its composition and effects, and that a more certain preparation should be substituted for it, and proposes the following formula:

Iodine and iodide of potassium, of each, .	5 grammes.
Alcohol at 90° Cent..	50 ,,
Distilled water, ...	100 ,,

Rub the iodine and iodide of potassium with a little water in a mortar, and then add the alcohol and the rest of the water; keep the solution in a well-stoppered bottle(*b*).

(*a*) Bell's Pharm. Jour., vol. vii. No. 6, Dec. 1847.
(*b*) *Journal de Pharmacie*, vol. x. p. 113.

Tincture of Hops.—Mr. W. Coates proposes the following economical plan for the preparation of the tincture of hops, which he thinks might be employed with advantage for other tinctures the ingredients of which are bulky. The hops, enclosed in a calico bag, and moderately compressed, are placed in a covered shop jar, and the requisite quantity of proof spirit added, which will be found sufficient to cover the bag. By placing a piece of tin-foil over the top (provided the lid fit tolerably tight), evaporation will be prevented. Having been macerated the usual time, the clear tincture is allowed to drain off, and the bag with its contents transferred to the press. From twenty ounces of spirit, and three of hops (in which quantity he made the experiment), he obtained, by using instead of a press an ordinary lemon squeezer, fourteen ounces of tincture, the remaining six ounces being absorbed by the hops. He then poured six ounces of water over the bag, and pressed out the same quantity which (presuming the tincture and water to have been equally mixed) of course contained three ounces of the former; six ounces of water are again added to the hops, and pressure applied as before. He had now twelve ounces of liquid containing four and a half ounces of tincture of hops, and six and a half ounces of water; the exact quantity required for reducing twelve and a half ounces of rectified spirits to twenty ounces proof, which may be employed for the next three ounces of hops, or placed aside properly labelled till wanted(*a*).

Dr. Collier's Orange Quinine Wine.—The following is the formula recommended by this gentleman:

Take of good disulphate of quina,	24 grains.
Citric acid (in crystals), . . .	15 „
Genuine orange wine, ...	24 fluid ounces.

Dissolve.

Dose.—A dram-glass or liqueur-glass full or more. When pure this wine remains brilliant without precipitation.

SYRUPS.

Note on the Preparation of the Syrup of White Poppies. By M. Gobley.—M. Gobley states that he prepares the syrup of white poppies with the alcoholic extract of the capsules of the white poppy, which he obtains by treating, by the method of displacement, the capsules reduced to a coarse powder, drawing off by distillation the spirituous part of the liquid, and evaporating the residue to a proper consistence.

M. Molyn, in order to avoid the loss of alcohol which takes place during the operation, recommends us to treat the capsules with cold water, and to evaporate to the consistence of an extract; to dissolve this extract afterwards in a sufficient quantity of water to reduce it to the consistence of syrup; then to add alcohol in order to precipi-

(*a*) Bell's Pharm. Journal, vol. vi. No. 9, March, 1847.

tate the mucilage and salts; to filter the liquid, and make it into a syrup with refined sugar. But M. Gobley remarks that M. Molyn has neglected to state that distilled water only should be used, as, according to the judicious remark of M. Gueranger, if we employ undistilled water, the carbonate of lime contained in it will, during the concentration of the liquors, precipitate the morphia to the great detriment of the preparation. But M. Gobley states, that experience has convinced him that the process proposed by him gives a transparent syrup, and one not liable to undergo fermentation(*a*).

Syrup of Iodide of Iron. By Mr. Walter Hemingway.—Mr. Hemingway mentions that, owing to the syrup of iodide of iron being frequently met with in druggists' shops of a bad colour (and therefore giving dissatisfaction), which fault he partly attributes to want of dexterity in conducting that part of the process which requires the application of heat after the addition of the iodide, either for the purpose of reducing the quantity or dissolving the sugar, he proposes the following formula as likely to avoid this source of failure:

Take of iodine (pure and dry), 3 ounces, 6 drachms, 2 scruples.
Iron filings (clean), . 2 ounces.
Distilled water, q. s.

Add, little by little, the iodine to the iron filings, in a mortar containing six ounces of water, allowing each action to cease previous to the next addition; agitate the mixture, without additional heat, until it assumes a green colour; transfer the liquid portion into a measure; wash the filings that remain with half an ounce more of water, again, and a third time; mix the washings with the decanted fluid, and make up exactly to twelve fluid ounces and a half; call it "the solution," and keep it in a well-stoppered bottle with iron wire and filings: each fluid drachm will contain thirty grains of crystallized iodide of iron. When wanted for use, pour off without disturbing the sediment, and pass through coarse filtering paper.

From this solution it is proposed that the syrup should be made. Should it become brown by keeping (and it will if the stopper be insecure), the bottle must be shaken that the green appearance may be recovered; and should this be the case when the syrup is about to be made, time must be given for the dregs to subside, in order that the filtration may proceed as rapidly as possible.

To make the syrup, take of

Simple syrup (white), P. L., . . 15 fluid ounces.
Solution of iodide of iron as above, 2 do. do.

Put the syrup into a common saucepan (lined with enamel); accurately balance the whole; next apply heat, until, by a gentle ebullition, it has decreased in weight two ounces avoirdupois; remove it from the fire, get ready the solution, and, without loss of time, mix

(*a*) *Journal de Pharmacie*, vol. ii. p. 356, May, 1847.

it intimately with the reduced syrup, and bottle directly (if the consumption is small) in four ounce bottles: when quite cold shake well up. Each fluid drachm contains four grains of crystallized iodide, the equivalent of rather more than three grains of the dry.

Mr. Hemingway states that neutral solution of iodide of iron is *blue* green, which is the colour of the syrup made according to this process. Yellowish green, yellow, and brown appearances, indicate degrees of decomposition and corresponding imperfection, in formulæ which are attended with their production(*a*).

Observations on Syrupus Croci. By Mr. Charles Cracknell.—Mr. Cracknell states that having suffered much inconvenience and annoyance from the separation of the colouring matter in the syrup of saffron, he made some experiments with a view of finding a method of preventing the above disagreeable circumstance.

Mr. Cracknell found that white sugar added to a cold infusion (instead of a boiling) in the proportions ordered by the Pharmacopœia, and with this two grains of carbonate of potash for each ounce of sugar, and the whole dissolved with a gentle heat, formed a syrup, which possessed for a very long period all the transparency and aroma, and nearly all the colour, it had when first prepared.

Mr. Fordred says, that a method of preserving syrup of saffron from undergoing decomposition has lately come under his notice, which consists in evaporating the syrup to dryness, which was dissolved in water when dispensed(*b*).

An easy and economical Method of preparing Mannite. By M. Giovanni Ruspini.—Dissolve with a gentle heat seventy-two ounces of ordinary manna with about half of its weight of rain water, in which the white of an egg has been previously suspended; boil for a few minutes, and pass the solution through a woollen bag; the liquid thus obtained solidifies on cooling, it then presents the following character: a mass of pale brown colour, which is resolved by trituration into a pultaceous liquid like common honey.

Having strongly expressed the manna thus prepared through a linen bag, the author dries the mannite (nearly white) which remains in the bag, and reduces it into powder; he then dissolves it in alcohol, and when the solution is boiling he adds animal charcoal and filters it immediately through paper, taking care to allow the filtered liquor to fall into a porcelain capsule, when the mannite crystallizes on cooling. He has thus obtained thirty ounces of crystals, extremely white, and of a mother-of-pearl lustre(*c*).

EXTRACTS.

Process for preparing Cannabine or the Resin of the Indian Hemp. By the Messrs. T. and H. Smith.—The peculiar and marked narcotic

(*a*) Bell's Pharm. Journal, vol. vi. No. 7, January, 1847.
(*b*) Bell's Pharm. Journal, vol. vi. No. 2, August, 1846.
(*c*) *Journal de Pharmacie*, vol. x. p. 116, August, 1846.

action of the Indian hemp resides in a soft neutral resin, soluble in rectified spirit, but insoluble in water or weak spirit, and therefore separable by water from the alcoholic solution in the form of an extremely whitish pulverulent substance, which gives the liquid a milky appearance. The resin very much resembles jalap resin, or jalapine, except in remaining soft, even after continued drying, and in giving out a strong aromatic smell on heating, and having a warm, pungent, and balsamic taste. The following is the method employed by the Messrs. Smith for obtaining this extract. The plant is, after being bruised, digested in repeated portions of moderately warm water, pressing out each time till the water comes away colourless. It is then digested in a solution of crystallized carbonate of soda, using of this half the weight of the quantity of dried gunjah operated on.

After macerating at a moderate heat for two or three days the liquid is pressed out and pure water substituted, and this is repeated till the water comes away nearly colourless. The washing is for the purpose of removing a large quantity of brown colouring matter, which they found it difficult to remove in any other way than this. The alkali removes a further quantity of colouring matter, along with a large quantity of a fatty acid, *quite inert*, which may be got by adding an acid to the alkaline liquid after filtration. The plant is now dried till it ceases to lose weight, and then macerated or percolated with strong rectified spirit of wine. To the spirituous solution a milk of lime as thick as cream is added, containing one ounce of fresh burned lime for every pound of the plant. The lime removes any of the fatty acid and chlorophylle which may have been left by the soda. After filtration a slight excess of sulphuric acid is added, to throw down in the state of sulphate the lime left in the liquid; for this purpose one or two fluid drachms for every pound of the dried plant will be enough. A little pure animal charcoal is now also added, and shaken with the liquid for some time. The greater part of the spirit is now, by distillation, recovered from the filtered liquid, and the resin washed with a small quantity of rectified spirit; three or four times its bulk of water is then mixed with the liquid, and the dish (a porcelain basin) is set aside till the spirit has completely escaped by evaporation. The resin, being heavier than the watery liquid now left, remains at the bottom of the dish. The fluid is now carefully poured off, and fresh water used till it comes away free from any sour or bitter taste. The resin is now dried, either spontaneously or by the aid of heat, and to expedite the drying it is spread out occasionally in a thin layer on the side of the dish.

The resin is brown in mass, but of a fawn colour in thin layers; two-thirds of a grain acts as a powerful narcotic, and one grain produces complete intoxication. The resin contains the whole power of the plant. The dried gunjah yields from six to seven per cent. of the resin. One cause of the irregularity of the effects of the extract, as hitherto made, has been, without doubt, that water or weak spirit has been used instead of strong rectified spirit in its prepara-

tion, in which case the resin would be left in the marc. Gunjah is the dried Indian hemp plant(*a*).

On the Preparation of Acetic Extract of Colchicum. By Mr. Fordred.—Mr. Fordred states that most of this extract in commerce varies materially in its strength, which he conceives arises from inattention to the fact that a very large constituent of the cormus is starch, amounting to nearly 50 per cent. of the solid matter. The plan which he has adopted for some years, and which he has found to yield the best extract, is the following: he takes the fresh cormus and bruises it well in a large marble mortar, with a wooden pestle; as successive portions of it are crushed they are thrown into a large pan or tub; and when the whole is finished he throws over the mass the requisite quantity of acetic acid. He allows this to macerate two days, occasionally stirring with a wooden rod; he then presses it off and strains the liquid through a coarse sieve, merely to remove the solid pieces of cormus which are forced through, but not to interfere with the starch. He then allows it to settle and the supernatant liquor is drawn off, leaving the bed of starch at the bottom undisturbed; he then evaporates the liquor rapidly in a well-tinned pan, and when reduced to what the operator considers sufficient, the residuary starch is mixed in, and finally reduced to extract consistence by a heat not exceeding 100° Fahr., so as to avoid the gelatinization of the starch. The great error, he states, in manipulating this extract has been in evaporating the acid liquor as it issued from the press with the admixture of starch; directly the necessary heat was applied, of course the starch immediately gelatinized, and no subsequent exsiccation could produce a creditable extract(*b*).

OINTMENTS.

M. Jobert prepares three species of ointment of nitrate of silver for the treatment of certain acute and chronic inflammations of the joints. The following are the formulæ:

Ointment No. 1. Axunge, ... 32 grammes.
Nitrate of silver, . . 4 do.
No. 2. Contains eight grammes of nitrate of silver to thirty-two grammes of axunge.
No. 3. Contains twelve grammes of nitrate of silver to thirty-two grammes of axunge(*c*).

Ointment for the Cure of Chronic Eczema.—

Axunge, ...	40 parts.
Nitrous Turbith, . .	2 ,,
Extract of Opium, . .	1 ,,

Dissolve the extract of opium in a few drops of water, add then the axunge; rub up all together in a wedgewood mortar till the mix-

(*a*) Bell's Pharm. Journal, vol. vi. p. 171, No. 4.
(*b*) Bell's Pharm. Journal, vol. vii. p. 259, No. 6.
(*c*) *Jour. de Pharmacie*, vol. x. p. 200, Sept. 1846.

ture is perfectly homogeneous. This ointment is lightly rubbed morning and night to the part affected.

It is intended to replace those ointments which have the ordinary citrine ointment as their base, which, owing to the variable composition of citrine ointment, are uncertain in their effects(*a*). We suppose the author intends a subnitrate of mercury or a salt analogous to the ordinary turbith, the nitric acid replacing the sulphuric of the ordinary turbith.

PLASTERS.

Blistering Cloth. By M. Garoste.—Take of

Black pitch, purified, ...	125 parts.
White wax, ...	30 ,,
Cantharides, in fine powder, . . .	60 ,,
Olive oil, ...	8 ,,
Spirit of Turpentine, ...	15 ,,

The pitch is purified by melting it in a dish, and straining it through a close piece of linen. The pitch thus purified is melted in an earthen vessel over a gentle fire, with the wax; the cantharides, the oil, and spirit of turpentine are then added, when the mixture is well stirred. A small quantity of the plaster is thrown into cold water and kneaded; if it be neither too soft nor too brittle, it is then spread on the glazed side of some oil-cloth with a plaster iron slightly heated.

The quantity of wax, oil, and spirit of turpentine, may be varied according to the quality of the black pitch employed, so as to give the plaster a consistence suitable for its being spread on cloth. Copper vessels should never be used for preparing those medicinal compounds of which wax is an ingredient; the plaster should be melted in a glazed earthen vessel. The cantharides are added by means of a sieve, so as to divide the particles and prevent their collecting into lumps. These vesicatories should never be camphorated with a solution of camphorated ether, but rather with finely powdered camphor, and for this purpose the blistering cloth should be previously slightly warmed. M. Garoste considers this the most efficient and easy of application of all the formulæ published for blistering plaster(*b*).

Warming Plaster.—M. Mialhe proposes the following formula for a rubefacient plaster (which is free from the inconvenience attending that in ordinary use, and yet more active), viz.:

Burgundy pitch, . .	8 parts.
Black resin, ...	4 ,,
Yellow wax, ...	4 ,,
Turpentine, ...	1 ,,
Olive oil, ...	1 ,,
Tartar emetic, . . .	2 ,,

(*a*) *Jour. de Pharmacie*, vol. x. p. 449, June, 1847.
(*b*) *Jour. de Pharmacie*, vol. xii. p. 200, Sept. 1847.

Melt by means of a water bath the Burgundy pitch, the resin, wax, and turpentine; and add, constantly stirring the mass, the tartar emetic previously intimately mixed with the oil(*a*).

DECOCTIONS.

Decoctum Aloes Compositum. By Mr. R. W. Westall.—Mr. Westall states that, by preparing the compound decoction of aloes according to the following formula, several advantages are obtained, viz., that the article is of one uniform appearance, the rich colour is retained to the last, and the preparation is as good at the end of the twelve month as when first prepared.

Take of extract of liquorice, ...	14 drs.
Carbonate of potash, ...	2 ,,
Myrrh and aloes, of each, ...	3 ,,
Water, ...	20 oz.

Boil these ingredients gently with the above quantity of water in a water bath down to thirteen ounces, pour this into a bottle, then add croci three drachms, tinct. cardamom. comp. fourteen ounces; macerate for ten days, then strain through linen. Mr. Westall keeps it in this state, and adds an equal quantity of distilled water when required for use(*b*).

INFUSIONS.

How to make Senna pleasant to the Taste.—The *Bulletin de Therapeutique* signalizes the use of coffee in disguising the taste of purgatives for children; MM. Guersant and Blache frequently employing it for this purpose. A weak decoction of coffee is made, to which some milk and sugar are added, care having been taken while boiling the coffee to put in a few follicles of senna. If it is given to the children with a little bread, they will generally take it with avidity. This medicine generally acts freely upon children, and thus administered does not induce the violent griping it sometimes does on the adult(*c*).

APPENDIX.

Removal of Nitrate of Silver Stains from Linen.—The Messrs. Smith state, that these stains, although by the action of heat rendered so difficult to remove, may be very effectually and speedily, and without injury to the linen, removed by wetting the stains with the common solution of chloride of lime. In the course of a few minutes these pass from black to white, in consequence of the formation of the white chloride of silver; but as this would blacken by the action of light, it must be dissolved and washed entirely away. In conse-

(*a*) *Jour. de Pharmacie*, vol. x. p. 359, May, 1847.
(*b*) Bell's Pharm. Journal, vol. vi. p. 221, No. 5.
(*c*) Medico-Chirurgical Review.

quence of the ready solubility of the chloride in solution of ammonia, or hyposulphate of soda, this operation can be done without the least difficulty, by dipping the part of the cloth covered with the now white marks into either of these solvents, and then, after a few minutes, rinsing thoroughly in clean water. When the marks penetrate deeply, a longer period will be required in order to efface them(*a*).

Chloride of Soda as a Test for the Presence of Guaiacum in Resin of Jalap. By M. Smedt.—It has long been known that chlorine possesses the property of rendering resin of guaiacum blue. According to the author, the chlorides of soda and of lime also possess this property, and may be used for detecting the smallest traces of guaiacum resin, when mixed with resin of jalap. In fact two grains of a mixture of fifteen parts of resin and of jalap, and one part of guaiacum resin, dissolved in ʒi. of spirit, sp. gr. ·825, give, on the addition of a single drop of solution of hypochlorite of soda (chloride of soda), a green streak, which is deposited as a precipitate to the bottom of the glass, leaving the supernatant liquid of its original colour. M. F. Boudet has found that this test may be applied with equal advantage for detecting the presence of guaiacum resin in scammony(*b*).

Chemical Examination of Sassafras Root. By Dr. Hugo Reinsch.—Dr. Reinsch analysed the bark of the root, which contains a much larger proportion of the active constituents than the wood. His results are as follows:

Water,	90
Heavy volatile oil, light volatile oil, camphoraceous matter,	8
Tallowy matter,	8
Balsamic resin, wax,	50
Sassafrid,	92
Tannic acid,	58
Sassafrid, tannic acid, and gum,	68
Albumen,	6
Gum, red colouring matter, and salts,	30
Starch, reddish-brown colouring matter, tannic acid, and salts,	54
Starch, tannic acid, &c., extracted by a solution of caustic potash,	289
Insoluble woody fibre,	247
	1000

The substance called *sassafrid* is a peculiar principle which may be arranged with tannic acid. It is difficultly soluble in water,

(*a*) Bell's Pharm. Journal, vol. vii. p. 106, No. 3, Sept. 1847.
(*b*) *Journal de Chemie Medicale*, and Bell's Journal, vol. vi. p. 479, No. 10, April, 1847.

but in ether and alcohol is quite soluble. It communicates a dark colour to alcohol. Sassafras wood, freed from the bark, yielded similar results, but it contained scarcely half the quantity of the constituents which the bark yielded, and the volatile oil was even in still smaller quantity. This fact is especially worthy of notice, because we in general obtain from druggists the wood already cut, the bark being previously removed, and sold separately(*a*).

New Method of preparing Moxas.—M. Guepratte proposes the following plan of preparing moxas, which he states to be free from the inconveniences attending those in ordinary use:

Take a piece of washed calico, and dip it in a solution of subacetate of lead; when it is well impregnated with the solution, dry it and cut it into little fillets, of the height of which you wish to make the moxas; roll them into a cylindrical form, and retain the last turn by four separate points. In order to apply them, cover the surface to be burned with a solution of gum arabic, so that the moxa may adhere of itself; ignite the external part of the cylinder, and the combustion continues regular to the end(*b*).

How to mask the bitter Taste of Epsom Salts.—M. Combes has found that coffee possesses the power of concealing the nauseous taste of sulphate of magnesia: the following is stated to be his formula for an ordinary dose of about an ounce of the salt:

Sulphate of magnesia,	30 parts.
Ground coffee, . .	10 „
Water, . .	700 or 800 „

Boil these together for two minutes in an untinned vessel, remove from the fire, and having allowed the mixture to infuse for a few minutes, strain it, sugar it, and drink hot or cold, according to taste. To insure the effect the coffee must be boiled with the salt, as directed above (adding the latter to it afterwards, or to an infusion, does not suffice). If the quantity of the sulphate be much increased, and it is yet desired not to add more coffee than the above, that will suffice, if, while the fluid is boiling, a grain or two of tannin be added(*c*).

Electric Moxa.—Dr. Golding Bird proposes the following method of applying counter-irritation by what he designates his electric moxa.

Order two small blisters the size of a shilling to be applied to any part of the body, one a few inches below the other; when the cuticle is thus raised by effused serum, snip it, and apply to the one from whence a permanent discharge is required a piece of zinc foil, and to the other a piece of silver; connect them by a copper wire, and cover them with a common water dressing and oiled silk. If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed with nitrate of silver. In forty-eight hours

(*a*) Buchner's *Repertorium*, and Bell's Jour., vol. v. p. 429, No. 9, March, 1846.

(*b*) *Journal de Pharmacie*, vol. x. p. 34, July, 1846.

(*c*) *L'Union Medicale.*

a decided eschar will appear, which (still keeping on the plates), will begin to separate at the edges in four or five days. The plates may be then removed, and the surface where the silver was applied will be found to be completely healed. A common poultice may be applied to the part, and a healthy granulating sore, with well defined edges, freely discharging pus, will be left(*a*).

Formula for Frank's Solution of Copaiba.—

Prep. I.—Balsam of copaiba, ...	2 parts.
Liquor of potassa (P. L.), . . .	3 „
Water, ...	7 „

Boil it for two or three minutes, put it into a separator, and allow it to stand for five or six days, then draw it off from the bottom, avoiding the upper stratum of oil. To the clear liquid add one part of sweet spirits of nitre, perfectly free from acid, to which a few drops of liquor of potassa has been added, until it slightly browns turmeric paper; should it turn foul or milky, a very little liquor of potassa will usually brighten it; if not, place it in a clean separator for a few days, and draw it off from the bottom as before, when it will be perfectly brilliant without filtering(*b*).

Chemical Investigation of the Red Poppy. By Leo Meier.—The author found in the poppies vegetable albumen, gum starch, rhæadic acid, papaverate of lime, cerine, a soft resin, a fatty oil, wax, and woody fibre; and in the ash, chloride of calcium, chloride of potassium, sulphate of potash, sulphate of lime, phosphate of magnesia, phosphate of lime, carbonate of lime, and magnesia. The colouring principle of the flowers consist, according to the author, of two acids, one of which he calls rhæadic acid, the other papaveric acid(*c*).

New Method of coating Pills.—M. Dorvault has proposed a new plan of concealing the taste and smell of nauseous and acrid medicines when prescribed in the form of pills. As an illustration of his plan we subscribe the formulas as given by himself.

First Formula.—

Take of dried carbonate of potass, Pure sulphate of iron, ...	of each, ℈i.
Powdered rhubarb, ... Powdered liquorice, ...	of each, ℈ss.

Mucilage sufficient to form them into a mass; mix, and divide into twelve pills: after having slightly moistened them, roll them in finely powdered gum and sugar, aromatized with citron, and allow them to dry.

Second Formula.—

Take of croton oil, 2 drops. Powdered starch, . . . Powdered gum, . . .	of each, ℈i.

(*a*) Medical Gazette. (*b*) Pharmaceutical Times.

(*c*) Buchner's *Repertorium*, and Chemical Gazette, vol. xli. p. 235; No. 86, May, 1847, p. 194.

Mucilage sufficient to form them into a mass; mix, and divide into eight pills; slightly moisten them with mucilage, and allow them to dry(*a*).

Leeches.—A new plan of disgorging leeches, so as to render them efficient for two or three successive applications, has been successfully tried at the Hotel Dieu, Paris. The leeches are sent up in small covered earthen pots, covered with perforated linen, and after use they are returned into these pots and taken to the surgery. This matter being attended to prevents the animals being lost or put into vessels containing anything injurious. In the afternoon of the day after being used, a dozen leeches at a time are thrown into salt water, containing sixteen parts of salt to 100 of water. They are removed one by one, being seized by their posterior extremity, and plunged into water which feels very warm to the hand. The leech is then gently pressed between the fingers, which readily disgorges all the blood it contains. After being thus emptied the leeches are placed in a vessel of fresh water, which is renewed once in twenty-four hours. At the end of eight or ten days they may be used again, and will take as quickly as fresh leeches. The process of disgorging is again practised, and if they are in good condition they may be used a third time, but if not they are taken to the marshes and placed in a reservoir built for the purpose. The reservoir or basin is made of brickwork lined throughout with Roman cement, and filled with water carefully freed from all alkalinity, for alkaline substances seem of all most fatal to them. The bottom is covered over with mud, and many water plants are grown in it. The leeches bury themselves in this earth at the bottom, and remain until their healthy condition is quite restored. A gentle and continuous current of water passes through the reservoir. When they wish to take leeches from it they agitate the water, when the healthy ones rise to the surface, whilst the feebler ones remain at the bottom in the mud. Thus the hospital is constantly supplied with leeches, which fulfil every indication at a very trifling expense(*b*).

(*a*) *Journal de Pharmacie*, vol. x. p. 32, July, 1846.
(*b*) Medical Gazette.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

THE NERVOUS SYSTEM.

Neuroma.—Mr. Adams said it must be in the recollection of many of the members present that during the winter session, 1844, Mr. Robert W. Smith brought before the Pathological Society the result of two *post mortem* examinations he had made of patients who had died with neuromatous tumours. In these two cases, which were very similar to each other, the neuromatous tumours had been visible in almost every superficial nerve in the body. In each case they amounted to an almost countless number, had existed for many years, and had been always *painless* to the patients. One of the cases brought forward by Mr. Smith, had been, up to the time of the patient's death, under the care of Dr. Hutton, in the Richmond Hospital. Among the numerous tumours the patient had, was one which sprung from the centre of the right vagus nerve, in the middle of the cervical region, which, after ten years' growth, had attained the size of an infant's head; and in the left sciatic nerve of the same patient had arisen a neuromatous tumour, which extended from the lower margin of the glutæus to the popliteal region, and was fully equal in magnitude to the head of this patient, an adult about forty-five years of age. The man died emaciated, with hectic symptoms, and without pain, but the exact source of the exhausting hectic was a matter of conjecture. The second case, the *post mortem* examination of which was reported by Mr. Smith, had been under the care of Dr. Corrigan, in the Whitworth Hospital, where the man died of dysentery; and this case was very similar to the former. In these two instances the tumours were remarkable for their size and number; they were not accompanied by any pain, nor were they the source of any apparent injury to the patient, further than that arising from their weight or bulk(*a*).

Cases of solitary painful Neuroma.—Somewhat different from these *two* remarkable cases of neuroma already brought forward, will be found those I am now about to adduce. While in the former the tumours were to be found springing along the course of almost every nervous trunk in the body of each patient, in the cases I shall presently relate it will be seen that in each individual, only one small tumour appeared in the course of the *only nerve* affected

(*a*) Mr. Robert W. Smith has preparing for the Press a work on neuromatous tumours, which will be accompanied with sixteen large folio lithographic plates of examples of this disease, as large as nature. This work must be, undoubtedly, an expensive one for an individual; but it is to be hoped that the praiseworthy effort to communicate the results of his observations in a way worthy of so novel and so important a subject, may meet with the encouragement that such an enterprise, rare in those days, deserves.

by the disease. Again, in the two former examples the patients did not complain of any pain whatever in the tumours, and sought advice only on account of their size and number, and the growing deformity they produced; while in the latter the tumours will be seen to be comparatively small, and to have been accompanied with pain of the most distressing kind, requiring for the cure of the disease active surgical interference. Although the proper surgical treatment that these solitary neuromatous tumours demand cannot well be a matter of doubt, in consequence of the facts already brought before the profession, still it appears to me that the relation of the three following cases, which have been under my own observation in the Richmond Hospital, may not be considered uninteresting to this Society. In the first case I shall adduce, the *ulnar nerve*, in the second the *posterior tibial*, and in the third the *median*, was the seat of the neuroma.

Case 1. *Solitary neuromatous Tumour, consisting principally of a Cyst enveloped by the separated Fibrillæ of the Nerve.*—Owen Nolan, aged 40, was admitted into the Richmond Hospital in October, 1836, to be treated for an old stricture and a sarcocele. He had been a dragoon in the British army, but was now out of the service, and acted as a stable servant. While in hospital he directed my attention to a tumour he had on the internal side of the right arm, a little above the internal condyle of the humerus; it was of an oblong form, about one inch and a half long, and seemed to be an enlargement in the ulnar nerve, which, in the situation of the swelling, seemed to have acquired four times its normal size. This tumour appeared to one feeling it as if it were solid; it was moveable in the transverse direction only. This information was obtained at the expense of some suffering to the patient; he dreaded any one handling the swelling, or anything even touching it, because at the moment of each examination, and even for a quarter of an hour afterwards, a stinging pain was felt all along the course of the branches of the ulnar nerve. The pain was most severely felt in the fleshy portion of the palm, at the inner side, where the ulnar nerve divides and its branches sink deep into the hand, as also along the side of the little finger, and the ulnar edge of the ring finger. It is, however, to be remarked, that the patient never suffered any pain in the tumour except when it was suddenly touched or pressed upon, and from the situation of the disease these were accidents which seldom occurred. Independently of this affection, and the disease Nolan was then under treatment for in the hospital, it is to be remarked that his general health had suffered much while on service in India. He stated that while on duty he had been thrown from his horse, and of this fall he still bore on his person the sad memorial in a dislocation of his left elbow-joint, which had never been reduced. So that, "jam fractus membra," he neither sought for any active treatment to be applied to the removal of the neuroma, nor did we, under the circumstances, think it right to propose any to him. When he was somewhat relieved of the sarcocele

and stricture he left the Richmond Hospital, and in the latter part of the year 1839 was admitted into the Hardwicke Hospital for fever, of which he died.

The neuroma was found to consist of a swelling about one inch and a half long of the ulnar nerve in that part of its course where it is situated near and above the internal condyle of the humerus. This swelling, when cut into, proved to be a cyst containing a transparent, albuminous fluid; the cyst was formed within the neurilema; the filaments of the nerve, separated from each other, were spread out over the surface of the cyst, and were reunited into a trunk below the tumour.

It is worth observing that the case just related is singularly like that adduced by Cheselden in his Anatomy (1773),—the first example of neuroma, according to Wood, ever published,—who thus expresses himself relative to it:

"Cheselden is the first author who, so far as I know, has given a distinct account of the disease. There is a representation in his work of a nervous tumour, of which he gives the following description:—A tumour formed in the centre of the cubital nerve, a little above the bend of the elbow; it was of the *cystic* kind, but contained a transparent jelly. The filaments of the nerve were divided, and ran over its surface. The tumour occasioned a great numbness in all the parts that nerve leads to, and excessive pain upon the least touch or motion. The operation was done but a few weeks since; the pain is entirely ceased; the numbness a little increased; the limb, as yet, not wasted."—*Anatomy of the Human Body, by W. Cheselden*, tenth edition, p. 256. London, 1773.

Case 2.—*Case of Neuroma of the posterior Tibial Nerve, situated in that part of its Course where it passes behind the inner Ankle; Excision of the Tumour; Recovery from the Disease.*—In most cases, when the neuroma is solitary, and situated in the course of a nerve, where it is exposed to injury or pressure, such as that even of the ordinary dress, the pain that is excited in it by the most trivial causes is intolerable to the patient, who becomes anxious to undergo any operation to be relieved of the disease. Such was the case of a patient who was under the care of the late Dr. M'Dowel in the Richmond Hospital. He had a neuroma about the size of a Spanish nut, in the course of the posterior tibial nerve, where it passes behind the inner ankle. Such were the pains the patient endured in his daily work as a labourer, that he could not earn his bread. A consultation was held on the case at the Richmond Hospital, at which I attended, and it was advised that the neuroma should be cut out, dividing the nerve across, both above and below the tumour; which was done accordingly. The tumour removed in this case was of a fibro-cellular structure, surrounded by a dense covering. The operation was completely successful in relieving the man of his suffering, and the motions of the foot were not permanently impaired by the effect of the complete division across of the posterior tibial nerve. Although this case occurred many years ago,

and is quoted from memory, it is well remembered by Dr. Hutton, Mr. Smith, and myself.

Case 3.—*Case of Neuroma produced by a Wound inflicted on the median Nerve near the Wrist: Excision of the Neuroma, followed by Relief from Pain; subsequent Restoration of the Feeling and Use of the Hand.*—The last case I have to adduce is that of Catherine Mulvany, aged 27, a widow, the mother of four children. About two years ago she had the misfortune to fall against a window, and to receive from the broken glass pane a transverse wound, about one inch above the wrist joint, across this part of the front of the fore-arm. The *median nerve* was cut across in the wound, as well as part of some of the tendons, and it was five or six months before the wound was perfectly cicatrized. Subsequently to this a tumour formed in the course of the *median* nerve, just underneath the central part of the transverse cicatrix. This tumour, when she presented herself at the Richmond Hospital in September last, was about the size of a small almond; it was hard to the touch, and the source to her, to use her own language, of "awful suffering," and completely prevented her supporting herself or family. When at her work, if anything, even her dress, accidentally touched the tumour, severe pains shot down to the hollow of the palm of her hand, and upwards to her shoulder. She also complained much of *numbness* and *coldness* of all the parts of the hand supplied by the *median nerve.* As in the case of Nolan, who had neuroma in the ulnar nerve, the little finger and *ulnar* side of the ring finger were the seat of the peculiar sensations extending down from the neuromatous swellings, so in this case the peculiar sensations were felt principally in the parts supplied by the median nerve. Hence she complained that there was always a sense of coldness and numbness along the *radial* side of the ring finger, both sides of the middle and index fingers, and thumb, while the ulnar side of the ring finger and both sides of the little finger were in a natural state; in a word, these parts supplied by the ulnar nerve, as to temperature and feeling, were quite unaffected; no pain radiated along the course of the branches of any nerve but those of the median. In this case a neuromatous tumour as large as an almond, already mentioned, and which is exactly represented by the cast presented to the Society, was the source of all her suffering. The proper surgical treatment of her case obviously was, to cut out the neuroma. To effect this involved the necessity of cutting across and removing a portion of the median nerve with the neuroma. We did not hesitate to advise her to have the operation at once performed, to which she very gladly assented, as she found her sufferings daily to become aggravated. On Wednesday, the 9th of September, in the presence of the Richmond Hospital class, I removed the neuroma which I now exhibit.

Operation.—An incision more than one inch long was made over the tumour, in the direction of the longitudinal axis of the fore-arm; the fascia was thus exposed, and a director passed underneath

it, and this membrane divided on it; the upper extremity of the tumour was soon arrived at, and the point of entrance into it of the median nerve discovered. A probe was passed under the nerve here, and this last cut across; a hook was next passed firmly into the tumour, and the surrounding parts dissected from it, until the lowest extremity of the tumour was reached, and the median nerve, where it made its exit from the lowest point of the neuroma, was cut across; and thus was one inch of the median nerve, including the tumour, completely removed. The operation, as it may be well conceived, caused very great pain to the patient. However, the result has been most satisfactory; the wound healed in the course of a week, and her statement this morning at the hospital was to the effect that still some remaining feeling of coldness and numbness existed in all those parts supplied by the extreme branches of the median nerve, but we learned that there is now no morbid sensibility in the seat of the cicatrix where the neuroma existed—no starting or stinging pain darting down to the palm or upwards. In short, with great joy, she stated she was enabled to earn her bread, and to support by her labour, though with difficulty these times, her children.

Dissection.—Upon examination of the portion of the median nerve now removed, which was about one inch and a quarter, including the neuroma, it was noticed that the nerve, as to colour, consistency, and structure, seemed, above and below the tumour, to be quite normal. The oblong tumour itself had spread over it here and there some slender fibrillæ of the median nerve. A section of it, made longitudinally, presented a hard, white, homogeneous mass, of the same consistency throughout, having no distinct cyst, but presenting an appearance as if the neurilema of the nerve had been continued over it.

In this case, the surgeon had no choice between the operations which might have been proposed, either that of cutting out the portion of the median nerve including the neuroma, or that of dissecting out the tumour from the surrounding branches of this nerve as they passed outside or through the neuroma. The recollection that the disease in this case had originated from a wound which had penetrated deep into the centre of the median nerve, would have convinced us, had we any hesitation in the matter, that we had no other alternative than that of cutting completely across the nerve, and removing the neuroma.

Catherine Mulvany, the subject of the foregoing operation applied at the Richmond Hospital a few days ago, March 6, 1848, seeking advice for a sprain she had received, which circumstance afforded us an opportunity of inquiring as to the result of the operation for the neuroma which had been performed fifteen months previously: she stated that she was now enabled to earn her bread as well as ever she did. She had no pain either in the cicatrix which marked the situation of the neuroma, nor in the course of any of the branches of the median nerve. She had only one observation to make, showing that any

difference from the normal state of the hand now existed, namely, a remarkable coldness of the fingers supplied by the branches of the median nerve.

This sense of coldness was not only felt by herself, but the lowness of the temperature was also more appreciable by any one who examined the hand. This circumstance, however, in no way interfered with the uses of the hand, which for all practical purposes were completely restored.

Surgical Treatment of solitary Neuromatous Tumours.—Although we might well imagine that the proper surgical treatment which these *solitary* neuromatous tumours require, was a point of practice long since settled, and that, therefore, the cases just adduced, have lost much of the interest which should otherwise attach to them, yet I am of opinion that the multiplication of facts proving the safety and success with which painful neuromatous tumours may be excised cannot be considered altogether useless, since MM. Louis, Odier, and Warren state(*a*), that they have deemed it necessary to amputate limbs affected with this disease. Indeed, if we were not acquainted with the historical evidence of the advantage of excision of neuromatous tumours, and the cutting the nerve from which they spring, or had not witnessed results so happy as those which occurred in the two last cases I have adduced, we could scarcely credit that the operation of completely dividing across such a nerve as the median, or posterior tibial (necessary for the removal of the neuroma), should be followed only by some little temporary inconvenience.

It has now been fully ascertained, by the result of positive experiment on man, that neither loss of sensibility nor of power of voluntary motion ultimately remains, after cutting completely across such nerves as the ulnar, median, musculo-cutaneous, and posterior tibial, and perhaps some others. By such results, we should, I imagine, be encouraged, in the surgical treatment of neuromatous tumours, such as the foregoing, to prefer the cutting across of the nerve, and the excision of the neuroma from which it springs, to any other mode of operation.

We learn, however, that some surgeons have in particular instances considered it more expedient to endeavour to disentangle the neuroma from the branches of the nerve which surround it, than to resort to the complete excision above alluded to.

We read that Velpeau(*b*), in a case of a very large neuroma of the sciatic nerve, safely disengaged the tumour from the lash of branches, or fibrillæ, of which this great nerve is made up. He adds, that Chelius of Heidelberg adopted the same plan with similar success. Upon the whole, from what I have seen of those painful neuromatous tumours, I would say the *rule* should be to cut across the nerve above the neuroma, and then remove the tumour ; but there may be cases in which it may be practicable, and, perhaps,

(*a*) *Vide* Valpeau, *Leçons Orales*, tom. iii. (*b*) *Leçons Orales*, loc. cit.

prudent, without sacrificing the nervous trunk by division, to dissect out the tumour from the nervous fibrillæ which surround it.—*January* 16, 1847.

Acute Cerebro-Spinal Arachnitis ; Effusion into the Subarachnoid Tissue.—Dr. Mayne presented specimens and drawings of two cases of acute arachnitis, in both of which the symptoms, during life, had been nearly alike; both were very rapid in their course, were resistant to treatment, and the morbid appearances discovered after death were very similar: both occurred in the South Dublin Union.

The first case was that of a boy, aged four years, who had been in good health up to the 24th of March; on that day he was running about with the other children, eat his dinner, and about bedtime complained of pain in the stomach, vomited, and was very restless during the night; he was very thirsty, and vomited whatever he drank ; continued to complain of pain in the belly. Next morning (25th March) he was seen by Dr. Mayne, who observed that his countenance presented a tetanic expresssion; his head was firmly drawn back, and it resisted the efforts of Dr. Mayne to bring it forward; the lower extremities were stiff, although semiflexed; he had lost the power of voluntary motion, was unable to stand up, and could not preserve the erect position when he was lifted up and placed on his feet; the epigastrium was tender to pressure; the abdomen was not swollen or rigid ; there was neither headach, congestion of the conjunctiva, strabismus, nor heat of the scalp; the pulse was 120, and the sense of pain was all referred to the abdomen. The diagnosis was difficult, and the treatment consequently somewhat temporizing; the head was shaved, and calomel given in small doses. On the next day (26th) the pulse had fallen to 60; he had been moaning through the night, and had raved; the vomiting still continued, and he was unable now to give any account of his sensations. On the day following he was still worse ; he had been convulsed during the night so violently that the nurse, being unable to hold him, had at last strapped him down to the bed. The convulsions recurred frequently, the extremities became cold, and he died on the fourth day of the attack. On examining the body, the signs of acute arachnitis were observed within the cranium; over the hemispheres the serous membrane was generally dry, with some degree of clamminess, while lymph of a greenish colour had been effused in the subarachnoid tissue on the surface of the brain, and was very obvious along the sulci between the convolutions. This effusion was so copious at the base of the brain that all the cerebral nerves were covered by it, and it extended also into the vertebral canal, the spinal cord from one end to the other being enveloped by it. There had been no effusion into the ventricles.

The second case occurred three days after the first: the subject, a boy aged nine years, was attacked after dinner on the 30th of March, with similar symptoms to those observed in the preceding case; thus, he had pain in the stomach, vomited, his head was retracted, the

muscles of the neck were rigid, and the countenance had the tetanic expression, but the extremities were not so stiff as in the other case. Dr. Mayne immediately recognised this as another instance of the same disease, and he thinks these symptoms may almost be looked on as pathognomonic. This case, like the other, obstinately resisted treatment. Dr. Mayne, in the hope of overcoming the disease, directed venesection from the arm, and afterwards from the jugular vein; the bleeding was pushed so far as nearly to produce syncope. In addition to this, the head was shaved, leeches were applied over the mastoid process, and calomel administered every second hour. On the second day of the attack, convulsions set in; the left side was that affected by them. On the third day the pulse was imperceptible at the wrists, and the fæces were passed involuntarily; the calomel had, by this time, affected the gums. On the fourth day he died. The appearances observed in the examination of the body were similar to those of the other case, but more strongly marked. The arachnoid, not only within the cranium, but also throughout the vertebral canal, exhibited the effects of inflammation. On the upper surface of the cerebrum, the serous membrane was dry, and through it could be seen, in tortuous lines, the lymph filling up the sulci. On the upper part of the cerebellum, a yellowish green lymph had been effused; a similar effusion was very abundant at the base of the brain. Within the vertebral canal there was effusion of the same character, which was so copious in the lower part as to conceal the cauda equina. This lymph admitted of being scraped off the subjacent surface, and it was then discovered that the pia mater was not congested, nor was the substance of the medulla spinalis affected by inflammation or ramollissement.—*February* 20, 1847.

Disease of the Dura Mater and softening of the Brain.—Dr. Mayne exhibited the recent parts in this case. The patient was a man aged 45, of intemperate habits, and by occupation a process-server. In May last he received a severe beating while in the discharge of his duty, several violent blows being inflicted on the head; but he was able to return to his business in a few days. He then resumed his intemperate habits, and at the end of a fortnight was seized with an epileptic convulsion, and during the subsequent month he had two similar attacks; after the third seizure he was found to be hemiplegic upon the right side, and his mental powers were impaired.

In September he came under Dr. Mayne's care. He was then unable to express his ideas; he knew the words proper to convey his meaning, but he said precisely the opposite to that which he intended. He was painfully conscious of these involuntary errors, and when that which he wished to say was expressed for him, he seemed most grateful, and shed tears at the consciousness of his own imbecility.

At length he was seized with another epileptic fit, after which he remained much more stupid; he evinced a distaste for food, his discharges passed involuntarily, and he gradually became nearly

comatose. Under the influence of mercury he improved for a fortnight, but then, after another epileptic paroxysm, he became comatose, and died. The organs of sense remained throughout perfectly unimpaired.

Autopsy.—The arachnoid covering the convexity of the hemispheres was found to be thickened and opaque ; there was also subarachnoid serous effusion. Upon attempting to raise the brain out of the cranium, the inferior surface of the left middle lobe was found to be adherent to the dura mater throughout the greater part of the extent of the middle fossa at the base of the skull. The dura mater in this situation was covered with a morbid growth which presented all the characters of carcinoma, and the corresponding portion of the brain was softened.

MEDICAL MISCELLANY.

Case of foreign Body in the Air Passages; Expulsion by the Rima after four Months; Question of Operation; New Instrument. By J. M. O'Ferrall, M. D., F. R. C. S., First Medical Adviser to St. Vincent's Hospital.

John Merigan, six years of age, was admitted into St. Vincent's Hospital on the 3rd of August, 1847, on account of cough and difficult breathing. The following history was given of his complaint:

It was stated by his mother that, four months before admission, the child, then in good health, was engaged in play with his comrades, and was suddenly tickled by one of them, while he held some pebbles in his mouth. A severe and alarming cough instantly took place, and the child screamed with pain. After a short time he became more tranquil, and then said that he had three pebbles in his mouth, and that he had swallowed one of them when tickled.

From this period his breathing was remarked to be laborious, and he was subject to occasional fits of coughing, during which he appeared to suffer great pain, and on a few occasions spat some blood. His appetite had undergone very little change, and yet he had lost flesh.

The chest was carefully examined on admission into hospital, and the following phenomena recorded :

The muscular coverings of the thorax were attenuated. Its symmetry was nearly perfect ; but although mensuration did not establish an appreciable difference, the eye could detect a slight prominence of the right half of that cavity anteriorly. The respiratory movements of this side gave to the hand the impression of a degree of expansion greater than that which occurred in the opposite or left side during inspiration.

Percussion elicited a sound normally clear from both sides of the chest, anteriorly and posteriorly. The resiliency on percussion ap-

peared in a very slight degree to be less marked about the middle of the left side of the chest posteriorly.

Auscultation of the left chest revealed a moderate vesicular murmur, unmixed with rales, in the infraclavicular region. In the mammary region a few mucous and sibilous rales were perceptible. The locality and sounds of the heart were normal. Laterally, in the axillary region, the bronchitic rales were more constant. Posteriorly the left chest afforded no abnormal sounds above; in the middle and inferior portions, however, all the varieties of sibilous, sonorous, and mucous rales prevailed in a remarkable degree.

Auscultation of the right chest, anteriorly and posteriorly, discovered no trace whatever of bronchitic rales. The vesicular murmur in this chest was pure but exaggerated, and afforded a good example of compensatory respiration.

The general appearance of the child indicated impeded function in the respiratory apparatus. The colour of his face was slightly but distinctly sub-livid ; the expression was anxious and uneasy ; the alæ nasi dilated with every breath. The nails of his fingers were slightly purplish, but were well-formed, and did not at all resemble the appearance called clubnail. He had no sweats, nor had any chills been observed in the evening.

From those signs it appeared evident,

1st,—That there was a bronchitis in the left lung, which did not implicate its upper portion, and which had not extended to the lung of the right side.

2ndly,—That the respiratory function in the left lung, although not altogether impeded, was modified in a degree which called for the compensatory action of the lung of the right side.

And it was probable,

1st,—That the bronchitis was not idiopathic or ordinary bronchitis, since it was limited to one side, and to a portion only of that side.

2ndly,—That this bronchitis was not of tubercular origin, since it did not manifest itself in the apex of the lung; and further, because it was not accompanied by any of the symptoms belonging to phthisis.

There was, therefore, a localized irritation, for which it was impossible, on known pathological principles, to account, without reference to the history of the affection given by the friends of the patient; and I could not hesitate to conclude that a foreign body was lodged in the left bronchus, without quite blocking up the tube. All the physical evidence was in favour of the opinion, that the left tube contained the foreign body, although this inference implied a more obscure, because exceptional case.

The character of the cough was peculiar and not easily described. The instant the paroxysm commenced, the sound of the cough was confused by his screaming with pain, during which tears streamed from his eyes. When questioned as to the pain, he pointed to the

middle of the sternum. All attempts at auscultation in this state were defeated by the piercing cries of the child, and by the agitation of his frame. The paroxysm generally lasted about two minutes, and left him much exhausted. At its termination he occasionally spat a little mucus tinged with blood.

A few days after the child entered the Hospital Dr. Gueneau de Mussy visited the wards ;—it was the day before the invasion of the fever which threatened the life of this intelligent physician. I read for him my notes of the phenomena and my conclusions : in these he concurred, after a most minute examination of the patient.

The question of operation, now necessarily raised, appeared to me to depend on the following considerations:—Presuming the presence of a foreign body in the air passages, and supposing the trachea already opened, was there good reason to expect that it could be caused to pass through the artificial aperture, even when the body of the patient was inverted? The result of several operations on record, and especially of the remarkable case of Mr. Brunell, prove that a sufficient opening may be made in the trachea,—that the patient may be inverted, and that the foreign body may drop towards the glottis, eluding all attempts to procure its extraction. In the case of Mr. Brunel it will be remembered that although the artificial opening in the trachea was maintained for a considerable time, and that during this period several attempts were made to effect the removal of the foreign body by inverting the patient, yet it eventually made its escape through the rima, by which it had entered.

Considering, therefore, that an ineffectual operation might be followed by the bronchitis not unusual after tracheotomy, and that a general bronchitis would be most probably fatal in a case where one lung was already engaged in the performance of compensatory duty,—and that all this might occur without the least relief to the original cause of distress,—I believed it to be my duty to devise, if possible, in the first instance, some mode of preventing the failure of the operation as a means of removing the foreign body.

I proposed to have an instrument made which should be introduced through the artificial opening, and which, when the patient was inverted, should catch the pebble as it fell towards the rima. I gave the sketch to a cutler, who undertook to realize it. It was to be constructed of wire, in order to allow the air to pass freely through it. This little basket, attached to a handle, was, when in the trachea, to be made to open into two portions, like a bivalve shell, and was to be closed again when it had caught the foreign substance, by means of a ring slid along the handle. Aided by this contrivance, I was prepared to give the patient the chance of recovery by operation ; although, after such a lapse of time as four months, and with such evidence of long-continued local irritation, there was reason to apprehend that a fresh bronchitis would endanger his life.

At this juncture I happened to mention the case to Dr. Stokes, as an interesting problem in diagnosis. He came to see it, and after

a deliberate and careful examination of the patient, he joined me in the conclusion already stated, and he believed the operation to be justifiable.

While the construction of the basket forceps was in progress, however, the problem was suddenly solved by the expulsion of the pebble during a fit of coughing. The child was seized in the usual manner, and screamed violently ; the next instant he put his hand to his mouth, and cried out in delight, "The stone ! the stone !" while he handed the pebble to the attendant. From this moment he never suffered from cough, and his countenance and manner became unusually cheerful.

The pebble is limestone, highly polished. Its long diameter measures half an inch, and its short diameter three-eighths of an inch ; all its angles and edges are rounded off. Its shape is prismatic, so that a section through its short diameter would present three sides, one corresponding with the short diameter, and the two others raised upon that, as a base of the triangle. It would be superfluous to describe the form of this stone minutely, except as it affords an explanation of the fact already noticed, namely, that the bronchial tube was not completely occluded, and that air was heard to pass, though feebly, into the smaller branches.

The day following the expulsion of the stone the chest was again examined. The phenomena were very little altered, except that the respiratory murmur was louder than before on the left side. The bronchial rales still remained.

A succession of small blisters were directed to follow a very small cupping, and this was succeeded by a mild mercurial course. The health of the child improved ; the frequency of the breathing diminished, and he had no cough ; but some rales were audible on the left side, while the respiration of the right lung was a little exaggerated. Under these circumstances he was sent to the country.

I shall conclude the relation of this important case by a few brief remarks on the diagnosis and management of analogous states. It would, perhaps, be presumptuous to say, that, in the present state of our knowledge, a correct diagnosis can always be made in such a case, independent of the history of the accident. I am inclined, however, to hope that the record of the present case may lead us, in doubtful circumstances, to revise an incorrect history, or to elicit by inquiry facts of which no notice had been taken. If, for instance, the physical signs revealed the existence of a circumscribed bronchitis in a portion of the lung where tubercle is not usually deposited in its early stage,—and if a compensatory respiration in the opposite lung give evidence of impediment or modification of that function in the affected side,—and if to these signs were added a symptom so remarkable as the convulsive and painful cough now described,—there would be grounds for suspecting the presence of some *unusual*, *obstructive*, and *moveable* cause for the phenomena in question, and the history of the case would at once become the subject for more minute inquiry.

But, supposing the diagnosis to be established, our solicitude does not end here. The course to be pursued is a serious practical question. On the one hand we know that the foreign body may, at any moment, be expelled through the rima by a natural effort; and, on the other, experience teaches us that the most carefully performed operation may be followed by a fatal bronchitis, especially in cases where the area of the respiratory apparatus has already been reduced. But a still more serious difficulty is at hand. The operation may be performed, the dangers of a bronchitis actually incurred,—and yet the removal of the foreign body may not be accomplished. This has actually occurred in practice on several occasions; and in some of them the offending body has, after all, been expelled by a natural effort through the rima.

Believing, however, that the rule of practice will, under all the circumstances, be to extract the foreign body as early as possible, and before organic changes are effected in the lung, I think the attention of the profession should be seriously directed to the means of insuring a successful result when the operation is performed, and with this view I recommend the use of the basket forceps already described.

Cases in Midwifery. By T. Purefoy, M. D., Cloghjordan.

No. 1. *Cicatrices of Vagina; Protracted and difficult Labour; Hysteritis; Sloughing of Vagina; and Death.*—S. S., a shoemaker's wife, aged 40, has had one child about nine years ago; her labour was severe and protracted, and finally terminated by the aid of the crotchet, when the child was taken away piecemeal. Recovery was very slow, in consequence of violent inflammation of the vagina and soft parts, terminating in sloughing, and the establishment of a fistulous opening into the bladder, so that permanent incontinence of urine was the consequence of this unfortunate confinement. At this period the husband of this poor woman went to America, and did not return until about twelve months before her second confinement. On the night of the 6th of October, 1847, the waters came away, after the continuance of trifling labour-pains for four or five days previously. At the first visit on the 6th inst., at 2 P. M., upon making an examination, the vagina was found to be very short and unyielding, and surrounded at its upper portion by a thin, sharp, rigid, and nearly circular cicatrix, forming a sort of ring stricture of this part, and thus completely preventing any satisfactory examination of the os uteri being made.

By patient and persevering efforts the first finger was passed through the very contracted opening left in this rigid structure, when it came into contact with a soft, pulpy mass, found subsequently to be the cord, but first supposed to be the placenta; the movements of the finger, however, were so restrained that the os could not be detected.

A large quantity of liquor amnii, mixed with clots of blood, had

come away, but no unfavourable symptoms then existed. An opiate draught was now given to quiet trifling ineffective pains, with directions to keep the patient cool and quiet. On the 7th strong labour-pains occurred, with long intervals between. An oil draught was administered as the bowels were confined.

9 P. M. The cord may now be reached by the finger with some difficulty, but cannot, by any means, be retained above the strictured portion of vagina. By pushing aside the cord, an extremity may be just touched;—the elbow is supposed to present;—but the os uteri cannot be examined. A mixture of tartar emetic, containing half a grain in each dose, and repeated every second hour, the effects of the medicine being carefully observed, was now prescribed, with a view to promote dilatation of the os uteri and soft parts.

8th. Two fingers may now be passed through the stricture with difficulty; the unpleasant sensation produced by the pressure of the parts upon the fingers being such as would result from having them tightly bound round by a small cord. Upon continuing the examination, the narrowing of the vagina is found to be occasioned by an intimate, strong adhesion between the uterus and upper portion of the vagina, while no trace of the os uteri or its neck can be found. The fingers, once passed beyond this circular contraction of the vagina, immediately enter into the uterine cavity, when the membranous structure by which the vagina is obstructed may be examined between the finger and thumb, and found to consist of a strong, unyielding tissue, very thin at the edge, and much thicker and more unyielding at its attachment with the soft parts. It was now ascertained that the side of the chest, together with the fore-arm of the child, presents. A patient attempt was again made to promote dilatation of the strictured part by the aid of the fingers, but it was found wholly unavailing, in consequence of the very painful pressure thus made upon the fingers by the thin, sharp edges of the opening. At this critical moment, I had the advantage of the opinion and advice of Dr. M'Arthur, of Shinrone; when it was agreed that we should leave the patient to the natural efforts for some hours longer, since it was impossible either to turn or to extract the child without dividing the stricture; and, as no bad symptoms had yet arisen, it was considered prudent to defer any operation for the present. The tartar emetic mixture to be continued.

9 P. M. Pains have been strong and forcing through the day. The rigid parts are softer and more yielding. Artificial dilatation was now again persevered in for more than an hour, Dr. M'Arthur and myself relieving each other occasionally during this time. I now found it possible to pass my hand (an unusually small one) through the strictured opening thus dilated, and, by a painful effort, succeeded in bringing down one foot. The turning of the child, and completing the delivery, occupied us, very anxiously, for about an hour, as there was much difficulty experienced in removing the child with safety to the mother; fortunately, indeed,

for her, it was only seven and a half months old, as, had it been full-grown, the difficulties and dangers must have been greatly increased. The infant was undergoing the first stage of putrefaction.

Two days after delivery decided symptoms of inflammation of the uterus and vagina set in, indicated by a rigor, symptomatic fever, enlargement of the uterus, with great tenderness on pressure, but unattended by any severe pain; heat, dryness, and soreness of vagina and soft parts, with suppression of the lochia; urgent thirst, restlessness, and marked depression of spirits, with despondency; the features sallow, cheeks slightly flushed, and countenance at once expressive of acute suffering, anxiety, and dejection of mind. As leeching and warm bathing were remedies not to be obtained, the treatment consisted in one general bleeding, blistering of the abdomen in the advanced stage of the disease, and mercury to affect the gums, together with a suitable diet, and soothing fomentations to the soft parts.

This treatment, however, afforded merely temporary relief, and although when the gums were decidedly affected by mercury, we had some hope of ultimate recovery, yet the patient finally sank at the expiration of a month, worn out by repeated rigors, hectic fever, sloughing, and suppuration of the vagina, with obstinate diarrhœa, and attacks of bilious vomiting.

No. 2. *Cicatrices and Contraction of Vagina; Premature Labour; Recovery.*—Mrs. S., a farmer's wife who has had two children, and suffered much during her last confinement, about five years since, when it was found necessary to complete a tedious and painful labour by instrumental aid, being now pregnant a third time, incautiously underwent much fatigue during the seventh month, which brought on slight pelvic pains accompanied by a discharge of the liquor amnii. She was first visited on the 7th November, at 9 A. M., when she was found in a state of high febrile excitement, the result of fruitless pains, and loss of rest. Pulse 124; respiration 36; abdomen small; infant scarcely ascertainable by examination with the hand externally; but the fœtal heart is distinctly audible by the aid of the stethoscope. The bowels are regular, and the urine is passed without difficulty. The labour pains are few, weak, and ineffective; interrupted by long intervals of uterine inaction, when the patient enjoys sound sleep. The os uteri is situated very high up in the pelvis, and turned quite to the right side, dilated so as to admit the finger, when it is found to be very thin, and yielding anteriorly, whilst its posterior lip is thick, firm, and unyielding, being bound down to the upper and back part of the vagina by strong adhesions, which render the retraction or dilatation of this part nearly impracticable. The examination of the os uteri occasions acute pain and suffering, with a tendency to faint. It is found impossible to ascertain the nature of the presentation. An opiate was now ordered, with strict directions to keep the patient cool and quiet.

During the next twenty-four hours the poor woman underwent

much suffering, every returning pain occasioning her to scream out in agony. However, the dilatation of the os uteri went on progressively through all; and although a very high degree of irritative fever continued, it was not thought advisable to interfere further than to aid dilatation occasionally by one or two fingers gently passed round and within the os uteri. On the evening of the 8th inst., the breech was found to present, and about 12 P. M. on the same night, a seven-month still-born child was born, much to the delight of the poor sufferer. The fœtal heart could not be heard for some hours previous to delivery. This patient recovered without a single bad symptom occurring.

These cases are of some practical interest, as they are of rather rare occurrence, and in a very especial manner require the exercise of patience, gentleness, and of a matured and sound judgment, upon the part of the medical attendant. As no *fixed rules* can be laid down for the treatment of such cases, so a greatly increased responsibility devolves upon every individual who may have the management of them, as, unless where a consultation can be had, he must act solely upon the dictates of his own judgment and experience. The principle upon which the treatment of the first case was conducted was simple: to observe the natural progress of the labour, and to afford such aid as the circumstances of the patient might require during its course. The case was truly perplexing, and beset by difficulties on all sides, whether we consider the very unyielding nature of the soft parts, the unfavourable position of the child, or the great difficulty in turning at so early a period of pregnancy as the seventh or even the eighth month. However unfavourable the result, yet I think that the plan of treatment pursued was the best under existing circumstances. Where there was a choice between incising the strictured portion of the vagina, and dilating it artificially by the aid of the fingers and other auxiliary means, it appeared the safer mode of proceeding to dilate the parts; since, undoubtedly, there existed a very intimate union between the lower portion, or neck of the uterus, and the upper part of the vagina. Neither the os, nor neck of the uterus could be traced by the fingers; so, perhaps, the neck might have been separated, or destroyed in her first confinement, thus occasioning the adhesions and narrowing of the vagina. If the obstruction was produced in this way, an incision must have wounded the uterus, and so, perhaps, given rise to very troublesome, or even fatal hæmorrhage.

As to the operation of turning, when found practicable without doing any violence to the patient, it was preferred, as a less objectionable proceeding, and one attended with less risk, than the use of instruments.

In the second case the adhesions were of a much less formidable character than in the proceeding one, as the lower lip of the uterus alone was incorporated with the vaginal adhesions. The presentation was also more favourable, and doubtless served to promote the dilatation of the os uteri. The progress of the case proved

that incision of the cicatrices in the vagina was not necessary; for, although the dilatation of the os uteri and vagina was very slow, and exquisitely painful, yet it was progressive, and terminated happily for the mother.

OBITUARY.

When we commenced the memoirs and biographical notices of those distinguished physicians and surgeons who have practised in this country, we had hoped to have pursued this pleasing duty with but little interruption, and that but few occasions would occur to offer any interference with the plan we had laid down for carrying out this department of our periodical. We had procured materials for memoirs, and had had portraits engraved, of some of the great fathers of the Irish school of medicine of the last century; but the number of recent deaths among the members of the medical profession here, have, we regret to say, claimed that space in our pages which the former should have occupied. Since the 1st of January last upwards of thirty of our professional brethren have died; and, while the pestilence still thins our ranks, carrying off in a few days the young and strong,—leaving in its track the helpless orphan and the widow unprovided for,—the aged and the weak have also, in greater numbers than usual, sunk quietly into the grave. It really seems useless now to complain; above *five hundred* Irish medical practitioners have died within five years; and a large number of these contracted fatal diseases in the heroic discharge of public professional duties. With but one or two exceptions, the Government has heard the cry of their widows and orphans in vain. English sympathy, however, has not been wanting, nor English benevolence withheld from us. The London Ladies Relief Association, of whose generosity we gave an account in our last Number, has since added, through the instrumentality of His Grace the Archbishop of Dublin, to their former donation, the sum of 300*l.*, which the Committee has also distributed, part to the Medical Fund, and the rest among the widows and twenty-seven orphans of seven deceased medical practitioners. Subscriptions have also, in some instances, been set on foot with tolerable effect, and we understand the Medical Benevolent Fund is now in a position to allocate a portion of its income for the purposes originally intended. We anxiously look forward to the forthcoming annual meeting of this body, and we trust that the profession generally will no longer treat this valuable Institution with apathy, now that the conditions are attained which will, in future, render the Fund really useful.

There is scarcely a death which occurs among the profession in Ireland, to which a memoir might not be attached, did our space permit. The following deceased brothers, however, from their peculiar position, their labours, or their connexion with our School, more especially claim attention.

ALEXANDER JACKSON, M. D.,

Formerly State Physician.

Dr. Alexander Jackson was a native of the county Tyrone; and having been educated at a public school in Dungannon, he commenced the study of medicine at an early age in Edinburgh, where he was the contemporary and friend of the late Sir James Macintosh, who was also at that period a student of medicine. Dr. Jackson passed a few years of his professional life in the town of Lurgan, and afterwards settled as a practitioner in Dublin in the year 1795, where he soon after became attached to the hospital in connexion with the House of Industry; from this office he was transferred to the situation of physician to the Richmond Lunatic Asylum in 1814; and he retained the appointment to that establishment from its opening till the day of his death.

The public and the profession are much indebted to Dr. Jackson for his exertions in the formation of this asylum, as it was chiefly in consequence of his representation to the Government of the necessity for such an institution that its establishment was determined on. Previously to its erection, the only receptacle for pauper lunatics in this city, with the exception of a portion of Swift's Hospital, was the House of Industry; but the part of that establishment then appropriated to the insane was so limited in extent, and so defective in arrangement, as to preclude the adoption of any systematic plan for their moral and medical treatment. Dr. Jackson gave a great deal of consideration to the formation of the new asylum, and undertook a journey to England in order to visit similar establishments in that country, with the view of adopting such plans as appeared best calculated for an institution intended not simply for the safe-keeping of the insane, but for their rational treatment and cure. The Richmond Asylum was the first institution of the kind, in this country, constructed for the classification of the insane according to their several states of disease; for this purpose it affords ample convenience: and although it may be deficient in some improvements which have been introduced into more recent establishments, yet at the time of its erection it was far in advance of all existing asylums. Dr. Jackson entertained a favourite idea on the subject of the treatment of lunatics, which is explained in the following extract of a letter published by him in 1809:

"My mind has long indulged itself in the contemplation of a system of Asylums where the relation and dependency of the separate parts might be made subservient to the recovery of the patient; but I fear the plan is impracticable at present. Every physician knows the effect of change of scene and a quick succession of external objects in appeasing the distempered mind of the maniac, and eventually introducing new trains of ideas. My plan would be to combine the city and provincial Asylums into one comprehensive system: that it should rest with the discretion and judgment of the physicians to remove such patients as were likely to be benefited

by change of scene. I do not know whether the subject was ever taken in this view; but I am satisfied every ingenuous professional man will at once be convinced of its efficacy and practicability."(*a*) This plan of Dr. Jackson's is well worthy of serious consideration now, when a number of district Asylums exist under one systematic mode of management which would make its adoption perfectly practicable.

Dr. Jackson filled the office of State Physician jointly with the late Dr. Cleghorn for several years, and after the death of that gentleman, solely, until the abolition of the situation in the year 1831; the system of English centralization, so long pursued with regard to this country, being then particularly extended to the medical profession, when the offices of State Physician, State Surgeon, and Surgeon-General, the only places of honour or emolument which we possessed, were done away with. The policy was, to say the least of it, unwise.

Dr. Jackson enjoyed a very extensive and lucrative practice for a long period, and for several years before his demise he was possessed of an ample fortune, entirely the fruits of his professional labours. He had no family, and has frequently told some of his intimate friends that the proper disposal of his fortune was a subject of more anxious consideration with him than its acquisition. Besides a number of charitable bequests of minor importance, he bequeathed the sum of £8000 to found an Asylum near Aughnacloy, the place of his birth, for the maintenance of a number of indigent persons of respectable character, but without religious distinction.

Dr. Jackson died on the 19th March, 1848, in the eighty-first year of his age. During the greater part of his adult life he was subject to gout, of which he had frequent attacks, often combined with bronchitis, in a more or less acute form. This latter affection he was seldom quite free from in a chronic state. In addition to these diseases, during sixteen or seventeen years of the latter period of his life, he suffered from severe attacks of gall-stone, attended with jaundice. It was under a combination of such affections that he ultimately sunk, having more than once survived similar attacks, contrary to the prognosis of some of the most acute and experienced of his medical friends. It is deserving of attention, both in a pathological and practical point of view, that he never had gouty concretions nor dropsical effusions, and that he had habitually a very copious secretion of urine, by which, most probably, large quantities of excrementitious matters were carried off.

His official situation in the Richmond Lunatic Asylum has been conferred by the Government on his assistant, Dr. Mollan, and that gentleman's place has been filled by Dr. Tuohill.

(*a*) A few Observations on the State of the Lunatic Asylum of the House of Industry in Dublin. March 27, 1809.

PERCIVAL HUNT, M. D., F. K. & Q. C. P.,

Professor of Materia Medica to the Apothecaries' Hall of Ireland, Physician in Ordinary to Sir Patrick Dun's Hospital.

We lament to have to record the death of Dr. Percival Hunt, which took place on the 4th of March, 1848. In him the School of Dublin has lost one of its most useful supporters, and humanity one of its truest ornaments.

This gentleman was probably not much known outside the profession in Dublin, except in the remembrance of his numerous pupils. Of a respectable family, and possessing a competency, he sought but little for general practice, and his nature was too diffident and retiring to permit of his presenting himself to the world as an author. But there are many who will bear us out in the assertion, that as a teacher and an hospital physician there were few equal to him in merit.

He was born on the 27th of May, 1802, at Clermont in the county of Wicklow. His father, the late John Hunt, Esq., continued to reside there until the death of his wife in 1808, when he removed to Dublin for the education of his children. Percival, who was his youngest son, entered College in 1818, under the present Bishop of Cork; he obtained the second place at entrance, which in Trinity College is an evidence of superior ability, and he distinguished himself much during his collegiate career. He subsequently commenced the study of medicine, and very soon showed a predilection for the departments of chemistry and materia medica. He became a private pupil of Dr. Apjohn, the present Professor of Chemistry to the Royal College of Surgeons, at that time Lecturer at the Park-street School of Medicine; and he also spent much of his time in the laboratory of the late John Moore, Esq., an apothecary of this city, who was also a chemist of no mean endowments. In the year 1826 he took out the degrees of Bachelor of Arts and also Bachelor of Medicine, and became a licentiate of the College of Physicians. He then went to London, and obtained a dressership at the Middlesex Hospital. While in the English metropolis he attended the anatomical and physiological courses delivered by Sir Charles Bell at the Great Windmill-street School; and he also studied under Dr. Forbes and Mr. Guthrie, at the Westminster Eye Infirmary. In the latter part of 1827 Dr. Hunt visited Paris, and attended the great hospitals in that city, and in 1828 he went to Berlin, chiefly for the purpose of examining the pretensions of homœopathy, at that time creating much attention. Soon convinced of the futility of the pretensions of the proposed system of therapeutics, he returned to Dublin in the course of the year 1828.

Dr. Hunt was now an accomplished physician. He had possessed opportunities rarely attainable, and he had improved them with remarkable industry. He was soon appointed one of the medical

attendants to the Meath-street Sick Poor Institution; and shortly afterwards, in 1831, in conjunction with Dr. Corrigan, physician to Jervis-street Hospital. During the two following winters Drs. Hunt and Corrigan delivered lectures on the Practice of Medicine in the theatre of the hospital; and in 1833 they united with some other gentlemen to establish a medical school in Digges-street. In this new school Dr. Hunt selected the department of Materia Medica, to which he had always been attached, and shortly so established his reputation as a teacher, that in 1836 he was elected by the Apothecaries' Hall of Ireland their Professor on this subject.

Methodical and particular in all his habits, Dr. Hunt was peculiarly so as a lecturer. He conned the various periodicals, repeated the experiments detailed in them, took accurate notes of the results, and thus kept the most exact time with the onward progress of discovery. We have the manuscript notes of his lectures at this instant before us; we find them lined and interlined, blotted and altered, with different coloured inks, according as new facts became discovered; from year to year the result of experiments before his classes are noted, the failures marked, with their probable causes appended. We have examined his museum; nothing could be more neat, exact, and regular. His style as a lecturer was lucid, systematic, and philosophical. His lectures on therapeutics were particularly valuable. And why was this? Because he was an industrious and careful hospital physician.

In 1841 he was appointed physician extraordinary to Sir Patrick Dun's Hospital. He attended both it and Jervis-street Hospital until 1843, when he resigned the latter. In 1846 he became physician in ordinary to Sir Patrick Dun's Hospital. Into his hospital attendance he carried the same punctuality and accuracy that distinguished him in all his relations, and to the end of life he was a sincere student.

Such men as Dr. Hunt, who are practical without being overburdened with practice,—learned, laborious, and earnest,—are invaluable in a great medical school like that of Dublin. As society is constituted in these countries, the utility of these men is increased by their possessing a rank and competency of pecuniary means calculated to confer respectability on the profession of medical teaching. In these days of mere trading, such examples of a pure love of science are of great value in maintaining the dignity of our profession.

Dr. Hunt was a thorough gentleman. As a man, he fulfilled the various duties of social life in a manner which gained him the affection and respect of all; he was emphatically a man of honour, one whose word could at all times be depended on; and although extremely particular about money matters, his charity was generous but discriminating.

For several years his health had been delicate. During the autumn and commencing winter of last year, symptoms of heart and

liver disease began to display themselves with gradually increasing severity; and he died, as we have already mentioned, early in March. During the last few months of his life he was engaged in assisting Dr. Apjohn in preparing a new Dublin Phamacopœia by the appointment of the College of Physicians.

Dr. Hunt wrote very little. Although possessing ample materials, he had a great repugnance to publishing. In the sixth volume of our former Series he published a brief account of a case of Encephalic bruit de soufflet (1835).

PERCIVAL BANKS, M. D., L. R. C. S. I.

Percival Banks, the oldest licentiate of the Irish College of Surgeons, died upon the 9th of March last, in the eighty-fourth year of his age. The family of Banks emigrated to this country from Aylesbury, in Kent, and settled originally in the neighbourhood of Ardee. An offset of this family located in Clare; and, about the middle of the last century, we find Percival Banks, the father of the subject of this memoir, a physician of eminence in Ennis. His son, who was the youngest of twenty-four children, was brought up to the same profession, after the manner of the hereditary ancient physicians of this country, and acquired from his father the first rudiments of his art. The School of Dublin was, as far as the teaching department was concerned, then in its infancy. On a future occasion we intend to give some account of the origin and progress of the Surgical School, and the Irish College of Surgeons; but for the present it will suffice to say, that sixty years ago the chief teachers of anatomy in this city were Dr. Cleghorn, the elder, in the University, and Mr. Halahan, in the old College of Surgeons, which at that time stood in Mercer-street. All our students, who wished to gain a thorough knowledge of the profession, particularly in the surgical department, spent some time, generally a year or two, on the Continent, chiefly in Paris or Montpellier; for the mere possession of diplomas was not then, as, in many instances, it now is, the chief aim of the young practitioner.

Mr. Banks went to Paris in 1785, where he remained two years, studying under Fourcroy, Piron, and other eminent teachers of that period. In 1787 he returned to England, and was immediately appointed by the Commissioners of the Navy, under a warrant from the "Master, Governors, and Commonalty of Surgeons of London," as surgeon's first mate, on board the Racehorse sloop of war.

In 1784 the first charter was granted to the Irish College of Surgeons, and on the 7th of May, 1789, Mr. Banks received his letters testimonial, William Dease being President, and Messrs. Obre, Bowes, Croker King, M'Evoy, and Philip Woodroffe, Censors. Some time after Mr. Banks returned to Ireland he translated several volumes

of the Memoirs of the Royal Academy of Surgery in Paris(*a*). He also took out a degree in medicine, but in what university we have not been able to discover, probably in Paris or Rheims. He served for several years in the army as surgeon to the 9th Foot, the Cardiganshire and the county Clare regiments of Militia; and he had charge of a large number of troops on their return from the disastrous Walcheren expedition. Mr. Banks was afterwards appointed surgeon to the county Clare Infirmary, and enjoyed considerable repute as a practitioner in Ennis and the surrounding neighbourhood for many years. He was also one of the physicians to the Ennis Fever Hospital. Before there was a College of Surgeons in Dublin, it was necessary, in order to qualify for the situation of surgeon to a county infirmary, to be examined by a board composed of the medical staff of Dr. Steevens' and Mercer's Hospitals; and as the Act of Parliament which required this remained in force for many years after the creation of the Irish College of Surgeons, Mr. Banks was examined by the Board, in order to qualify him for such an appointment, on the 24th September, 1789(*b*). The examiners on this occasion were George Stewart, then Surgeon-General, and Messrs. Hume, Boyton, Jebb, Obre, Gibbine, Taylor, Woodroffe, and L'Estrange. Dr. Banks had given up practice for many years, and died at the residence of his son, Dr. John Banks, in this city.

RICHARD STRONG SARGENT, M. D., F. K. & Q. C. P.,

Lecturer on the Practice of Physic, &c.

Dr. Sargent was born in Dublin in 1805; he entered the University in 1822, and graduated in 1827. He commenced the study of medicine in 1825, in the Richmond School, and was clinical clerk to the late Dr. John Crampton, in 1829, in Sir Patrick Dun's Hospital, and shortly afterwards became a dresser in the Richmond Hospital under Dr. M'Dowell. In 1832 Dr. Sargent was appointed by the Government to the temporary Cholera Hospital at Granard, in the county of Longford; to the duties of which, as well as the general care of persons seized with that fatal epidemic in the surrounding neighbourhood, he devoted all his time and energy. In 1833 he was appointed physician to the Royal Free Hospital in London, a situation he held for that and the following year. This post of promise, and extensive field for practical investigation, he was induced to resign by a lucrative offer in the West Indies, where he was intrusted

(*a*) Translations of some of the Memoirs of the ci-devant Royal Academy of Surgery in Paris, within a short period of the Revolution, with plates, by Percival Banks, M. D., Licentiate of the Royal College of Surgeons in Ireland, Surgeon to the County of Clare Infirmary, &c., and dedicated, by permission, to the Members and Licentiates of the Royal College of Surgeons in Ireland.

(*b*) On this subject see note to "The Second Part of the Metropolis." Dublin, Barlow. 1806. p. 74.

with the charge of one of the large estate hospitals in the island of St. Lucia. While there, he suffered several times from the fever endemic in the country; and his health being much impaired, he returned to Ireland, and settled as a practitioner in this city in 1836; shortly afterwards he joined the College of Physicians, and in 1842 was elected a Fellow of that body. He was also a graduate in medicine of the Universities of Dublin and Cambridge, and for several years filled the office of secretary to the medical section of the British Association.

Dr. Sargent was one of the physicians to that valuable establishment, the Sick Poor Institution in Meath-street. This he resigned on being elected one of the physicians to the Whitworth Hospital, Drumcondra, in 1843, the labours of which he continued to perform till the date of his last illness. He was also a lecturer on the practice of Physic in the original Peter-street School of Medicine, in this city, for several years.

Upon the erection of the fever sheds in connexion with the Dublin North Union Workhouse last summer, he was appointed one of the medical attendants. Here he laboured early and late, having the care of *one hundred patients*, at the ordinary rate of Government remuneration.

It is the recorded opinion of eminent men and those long experienced in the management of fever, that from forty to fifty cases are the most a practitioner can treat effectively in the day, giving to himself and his patients a fair chance for their lives. This question we have no desire here to discuss. Dr. Sargent fell a victim to his exertions. Upon the morning of the 11th of January last he went to the sheds, having previously received a severe wetting, under the depressing influence of which he nevertheless conscientiously performed his allotted task. That day he contracted typhus, and died on the 27th of the month, in the forty-second year of his age, leaving a widow and seven children.

Dr. Sargent was a good classical scholar, a man of most extensive reading, of general literary acquirements, and greatly admired by a large circle of friends. He published some papers in the periodicals, and in the twentieth volume of the former series of this Journal he wrote an article, displaying considerable research, "On the Condition of Medical Science in Egypt under its different Dynasties," (1841).

MARTIN TUOMY, M. D., H. F. K. & Q. C. P.,

Formerly Professor of the Practice of Medicine to the School of Physic in Ireland.

Dr. Martin Tuomy was born in the year 1764, at the residence of his father, Brandon Well, county Kerry, and, when very young, entered the University of Dublin as a Sizar. He subsequently obtained a scholarship, and his college course generally was one of pro-

gressive success, as he almost invariably carried off the premium or certificate in his class. The original Historical Society was then in full vigour, and there any young man of knowledge, ability, and eloquence in particular, had an opportunity for displaying his talents. It was there Mr. Tuomy first attracted attention, being both an accurate historian, and an able and ready debater. Although a Roman Catholic, he obtained a Scholarship (in 1788), and was one of the first of that religious persuasion who graduated as such in Trinity College on the repeal of the Statute in 1794(*a*). He afterwards took out the degree of Doctor of Medicine in Edinburgh. On his return to Dublin he married the daughter of Thomas Burroughs, Esq., Master in Chancery, and grand-daughter of Sir Henry Cavendish.

Dr. Tuomy took out the license, and was subsequently elected an honorary Fellow of the College of Physicians. At this period Roman Catholics were ineligible to the professorships of the School of Physic; on the rescinding of that law, however, Dr. Tuomy was elected to the chair of Physic, an appointment he held for sixteen years, having been twice re-elected. Dr. Tuomy was a very popular lecturer in his day, having a most retentive memory, possessing a vast store of general and classical, as well as professional information, and being gifted with considerable powers of eloquence. In right of his office he was one of the attending physicians to Sir Patrick Dun's Hospital, and was also connected with the Dublin General Dispensary, where an abundant field for practice was opened up to him. The result of this extensive acquaintance with the diseases of the lower orders was his "Treatise on the principal Diseases of Dublin"(*b*). He also

(*a*) The circumstances attending Mr. Tuomy's retention of his scholarship requires explanation. According to the original Charter, the Statutes, and the Act of Parliament, no one but a member of the Established Church could graduate in the University of Dublin, or hold any office in it whatever. Occasionally, however, Roman Catholics obtained scholarships; and, partly from laxity of rule and discipline, and partly from a feeling of good-nature on the part of the Board, they were permitted to retain this reward of their talent and industry without inquiry. Indeed we believe the sacramental test was not enforced until after this period, and until 1794 no record was kept of any man's religion at entrance. But although the few Roman Catholics that then, from time to time, obtained scholarship, were permitted to enjoy all the collegiate privileges, the franchise, which was then confined to Fellows and Scholars, was denied them. At the time of the celebrated contested election in Trinity College, in 1790, between Dr. Arthur Browne, afterwards Prime Sergeant, and the Hon. Francis Hely Hutchinson, afterwards Lord Donoughmore, and Dr. Lawrence Parsons, afterwards Lord Rosse, Mr. Tuomy was earnestly solicited to conform, in order to qualify him to vote, and even to try to vote without conforming, as other Roman Catholic scholars were about to do, but he honourably refused. Mr. Tuomy was twice examined at considerable length before the Committee of the House of Commons. See "A full and accurate Report of the Proceedings in the Case of the Borough of Trinity College, Dublin, as heard before a Select Committee of the House of Commons, A. D. 1791," &c. Dublin, 1791. Mills, page 80, and 268. See also, "A Constitutional History of the University of Dublin, &c., by Denis Caulfield Heron, A. B." Dublin, 1848. M'Glashan. Second Edition, p. 84.

(*b*) Dublin, printed by William Folds, 1810. 8vo. pp. 399.

published a book on Maculated Typhus Fever. These were very valuable works, particularly at a period when our professional writings were remarkably rare; but the length to which our Obituary has already extended in the present Number prevents our making any observations on their nature and character, to which, however, we hope to return on some future day, and describe them in connexion with the medical literature of Ireland. Dr. Tuomy likewise published translations of Euripedes, Hippolitus, and Iphigenia, which evince classical research and literary ability of the highest order.

Dr. Tuomy soon arrived at a very high degree of eminence in his profession, and not only enjoyed a large share of public confidence, but was on terms of the most friendly intimacy with the most distinguished men of the day in this city, as his social qualities, as well as his acknowledged talents, secured him a large circle of admirers. He retired from practice and public life many years ago; and died early in January last, at the residence of his son, Dr. Tuomy of Carlow, at the advanced age of 84; but in the full possession of all his mental faculties.

THOMAS TAYLOR, M. D., F. K. & Q. C. P.,

Joint Author with Hooker of the Muscologia Britannica, &c.

We have also to record the death of Dr. Thomas Taylor, one of the most distinguished botanists which this country ever produced. He died at his residence, Dunkerron, Kenmare, early in February last, of fever contracted from his attendance among the poor. He was the eldest son of Colonel Taylor, a distinguished officer in the Indian army. He graduated both in Arts and Medicine in the University of Dublin; he was afterwards elected a Fellow of the King and Queen's College of Physicians, and was, during his residence in this city, physician in ordinary to Sir Patrick Dun's Hospital. He early exhibited a marked predilection for the study of botany, and in his excursions into the hills of Wicklow with his friends, the late Dr. Whitley Stokes and Mr. Mackay, many years ago (1813), he soon evinced those talents which so much distinguished his subsequent brilliant career. When thirty years of age, he had himself taught to draw, and his delineations of the non-flowering plants are, we believe, some of the finest extant. He was the joint author with Sir William Jackson Hooker of the Muscologia Britannica, and he also contributed the articles Mosses and Lichens, in Mackay's Flora Hibernica, from the preface to which work we make the following extract: "The second, and not least valuable part of the work, contains the orders Musci, Hepaticæ, and Lichenes, by Dr. Taylor, the well-known coadjutor of Sir William J. Hooker, in the Muscologia Britannica, who, of all the botanists in Ireland, was best qualified for the task. It may be seen that he has added a new genus

(Hydoplila) in the order Hepaticæ; and in the order Lichens a good many hitherto undescribed species, six of which appear in the Addenda." He also gave to science the details of the collection (principally Irish Fungi) of the late John Templeton of Belfast, one of the earliest, as well as the most distinguished and original, of Irish zoologists.

Sir W. J. Hooker, in recording his death in a recent Number of the London Journal of Botany, says: "Few naturalists had studied more deeply, and few more successfully, as his various writings testify, the cryptogamic plants of all parts of the globe, especially the *Musci*, *Hepaticæ*, and *Lichens;* and the recent additions to his Herbarium, many of which we ourselves had the happiness of contributing, would have given him occupation for many years to come, in the determining and describing them. During the existence of the Royal Cork Scientific Institution(*a*), Dr. Taylor was appointed Lecturer on Botany and Natural History there; but, on the breaking up of that establishment, he never after engaged in any public employment, and his circumstances did not require that he should devote much time to medical practice, a profession for which he was destined. He thus was enabled to make the study of botany the main business of his life, and few men devoted themselves to it with greater ardour. Besides his valuable contributions to the *Muscologia Britannica*, he wrote an admirable memoir on the *Marchantiæ*, illustrated with many figures, which appeared in the seventeenth volume of the Transactions of the Linnæan Society; he contributed largely to the cryptogamic portion of Dr. Hooker's *Flora Antarctica;* and the late volumes of the present Journal bear testimony to his deep knowledge of the *Lichens* and *Hepaticæ:* nor is our portfolio without materials for our future numbers, which we lament will thus constitute posthumous memoirs. Dr. Taylor possessed a mind well stored in various branches of science and literature, while his gentle and amiable manner rendered him a great favourite with all who had the happiness of his acquaintance; and we well know that during the distressful times of the south of Ireland, in the winter of last year, his medical knowledge, and his purse too, were alike employed in bettering the condition of his poor neighbours.

"Dr. Taylor's Herbarium, eminently rich in Cryptogamiæ, his library, and his microscopes, will be, by-and-by, offered for public sale, or disposed of by private contract." We sincerely hope that some of our public institutions, the University or the Royal Dublin Society, will not permit this valuable collection to leave the country.

(*a*) The withdrawal of the grant from the Cork Institution was another effort at provincialising but too successfully adopted with regard to this country. We have been told that since the destruction of this establishment the number of southern Students and Fellows in Trinity College has decreased. Is this true?

He was an Honorary Member of the Royal Irish Academy, and from the Proceedings of that body we copy the following just tribute to his merits, published in the Annual Report of the Council:

"Ardently attached to botany from very early years, and endowed with an acute eye, and keenly-discriminative powers of mind, he soon became known as an observer; and to his researches the Irish Flora is indebted for the detection of a large number of new species. These researches continued with unabated zeal through life. In 1818, in conjunction with Sir William Hooker, he published the 'Muscologia Britannica,' a work which, for accuracy and clearness, has seldom been surpassed, and which is still the best guide to a knowledge of the British mosses. On the withdrawal of the parliamentary grant from the Royal Cork Institution, he retired to an estate in the county Kerry, near Kenmare, where he continued to reside for the remainder of his life, employing himself in country business, and devoting to botany his leisure time. As a magistrate, he twice received the marked thanks of the Government. In the last season of awful misery, his purse and his medical skill were freely employed in alleviating the sufferings of his poorer neighbours; and it was *fever*, caught in the discharge of his duties at the workhouse of Kenmare, to which he was physician, which terminated his useful life at an age very little exceeding 60. Strong in frame, and remarkably active, he might have looked forward to a more lengthened career.

"Dr. Taylor was in correspondence with the most celebrated botanists of England, France, Germany, and America, by whom he was universally esteemed. 'He possessed,' in the language of an early friend, 'a mind well stored in the various branches of science and literature, while his gentle and amiable manners rendered him a great favourite with all who had the happiness of his acquaintance.' His loss is deplored by a wide circle of scientific and personal friends. He received the well-merited honour which has connected his name with this Academy in the year 1816."

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